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April 28, 2009
Project 2227E

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Charles Anderson
Schaaf & Wheeler
100 N. Winchester, Suite 200
Santa Clara, California 95050

Subject: **Phase 1 Geotechnical Subsurface Exploration and Laboratory Testing**
Stevens Creek Levees FEMA Recertification Project
Mountain View, California
Schaaf & Wheeler Task Order SCVW.18.08-002 B5

Dear Mr. Anderson:

This report presents the results of our Phase 1 geotechnical subsurface exploration and laboratory testing for the Stevens Creek Levees FEMA Re-certification Project in Mountain View, California. The portion of Stevens Creek to be investigated includes the east and west bank levees between Crittenden Lane in the north and Highway 101 in the south (see Vicinity Map included with Figure 1). The attached Figures 1 through 3 show the limits of the project, which begins at Station 110+00 near Highway 101 and extends to Station 170+00 near Crittenden Lane.

1. PURPOSE AND SCOPE OF SERVICES

The purpose of the Phase 1 subsurface exploration and laboratory testing program was to explore subsurface conditions at selected locations within the subject levee segment and to perform laboratory tests to evaluate engineering properties of selected soil samples. The work performed by us is summarized below.

1. Obtained deep boring permits from the Santa Clara Valley Water District (District).
2. Prepared a Work Plan for approval by the District and City of Mountain View (City).
3. Marked the exploration locations in the field.
4. Notified Underground Service Alert (USA), the City, and the District of our field exploration schedule. Attended meetings with the City, the District and members of the project team to review the proposed exploration locations.
5. Coordinated with the District for inspection of backfilling of our exploratory borings and CPT probes.
6. Performed subsurface exploration (discussed below).
7. Obtained GPS coordinates of each exploration location.

7. Obtained GPS coordinates of each exploration location.

8. Performed laboratory testing on selected soil samples.

9. Prepared draft and final boring logs, CPT logs, and laboratory test data sheets.

10. Prepared this report.

2. SUBSURFACE EXPLORATION

The Phase 1 subsurface exploration program included a total of four borings (B-1 through B-4) and eighteen CPT probes (CPT-1 through CPT-18). All except two borings and all except two CPT probes were advanced on the crest of the levees. The levee crest currently has a paved surface on the west levee and a dirt or gravel surface on the east levee. Two of the borings (B-3 and B-4) were advanced on the existing maintenance road along the inboard toe of the levee on the western creek bank near Crittenden Lane. Two of the CPT probes (CPT-17 & CPT-18) were advanced on the existing maintenance road along the inboard toe of the levee on the eastern creek bank near Crittenden Lane. The approximate boring and CPT locations are shown on the attached Figures 1, 2 and 3.

2.1. Borings

The borings were advanced on September 15 and 16, 2008 by V & W Drilling, using a CME 75 drilling rig equipped with an automatic trip hammer. The approximate location, latitude and longitude, drilling method used, and maximum depth of exploration for each boring are tabulated below.

Designation	Approximate Location	Approximate Latitude and Longitude (degrees)	Drilling Method & Approx. Maximum Explored Depth (feet)
B-1	Sta. 117+50, east bank crest	37.410482 -122.068646	Hollow stem boring – 34½
B-2	Sta. 140+00, east bank crest	37.410482 -122.068646	Rotary wash boring – 69½
B-3	Sta. 153+50, west bank inboard maintenance road	37.420346 -122.068683	Hollow stem boring – 31½
B-4	Sta. 164+00, west bank inboard maintenance road	37.423325 -122.068706	Hollow stem boring – 31½

In the field, our personnel visually classified the materials encountered in the borings and maintained a log of each boring. Samples were obtained from the borings using a 2-inch outside diameter (1.4-inch inside diameter) split-barrel sampler (also called a Standard Penetration Test sampler), a 3-inch outside diameter (2½-inch inside diameter) split barrel sampler with 6-inch-long liners, or a 3-inch diameter thin-walled Shelby tube. Drive samples were obtained by driving a soil sampler up to 18 inches into the earth material using a 140-pound hammer falling 30 inches. The number of blows required to drive the samplers was recorded for each 6-inch penetration interval. The number of blows required to drive the sampler the last 12 inches, or the penetration interval indicated on the log where harder material was encountered, is shown as blows per foot (blow count) on the boring logs. The Shelby tubes were hydraulically pushed into the soil. The pressure used to push the Shelby tubes and the depth of penetration are shown on the boring logs.

The CME 75 rig is equipped with an automatic-trip hammer. Because of its higher energy efficiency, an automatic-trip hammer typically produces lower blow counts than a rope and cathead system.

Soil samples were collected from the borings at about 5-foot vertical intervals. Soil samples were sealed in the field and transported to our laboratory for further evaluation and testing. Visual classification of soils encountered in our exploratory borings was made in general accordance with the Unified Soil Classification System (ASTM D2487 and D2488). The laboratory test results were used to refine our field classifications. Two Keys to Soil Classification, one for fine grained soils and one for coarse grained soils, are included in Appendix A together with the logs of the borings.

The borings were backfilled with cement grout in accordance with the SCVWD requirements and capped with cold patch asphalt in paved areas. The drilling spoils were placed in 55-gallon drums and removed from the site. Please refer to the report in Appendix D for details regarding testing and disposal of the drums.

2.2. Cone Penetrometer Tests

CPT-1 through CPT-18 were performed by John Sarmiento & Associates on September 8 through 10, 2008, and ranged between approximately 35 and 70 feet in depth below existing ground surface. CPT involves pushing a small diameter (10 cm^2 cross-sectional area) steel probe into the ground using a hydraulic jack attached to a truck mounted rig. The tip of the probe is instrumented and takes almost continuous measurements (roughly every 1 inch) of tip resistance, side friction resistance, and pore pressure. The CPT data and typical interpreted soil properties, presented at about 6-inch depth intervals, are included in Appendix B and include the following:

Symbol	Explanation
Qc	Tip bearing resistance
Qc'	Tip bearing resistance normalized for overburden
Fs	Sleeve friction resistance
Rf	Tip/sleeve friction Ratio
SPT (N)	Equivalent standard penetration blow count
SPT' (N')	Corrected equivalent standard penetration blow count
EffVtStr	Estimated effective overburden stress
PHI	Interpreted internal friction angle
Su	Interpreted undrained shear strength
Soil Behavior type	Interpreted soil behavior type
Density Range	Estimated range of total soil density

The approximate location, latitude and longitude, and maximum depth of exploration for each CPT are tabulated below.

Designation	Approximate Location	Approximate Latitude and Longitude (degrees)	Approximate Maximum Explored Depth (feet)
CPT-1	Sta. 113+50, east bank crest	37.4091996 -122.068791	37
CPT-2	Sta. 117+50, east bank crest	37.416607 -122.068334	35
CPT-3	Sta. 122+50, east bank crest	37.411871 -122.068632	70
CPT-4	Sta. 133+00, east bank crest	37.415704 -122.068332	70
CPT-5	Sta. 140+00, east bank crest	37.416607 -122.068334	70
CPT-6	Sta. 147+00, east bank crest	37.418565 -122.068224	70
CPT-7	Sta. 156+00, east bank crest	37.421085 -122.068200	70
CPT-8	Sta. 162+00, east bank crest	37.422647 -122.068185	70
CPT-9	Sta. 168+00, east bank crest	37.24316 -122.068189	60
CPT-10	Sta. 115+50, west bank crest	37.409704 -122.068729	70
CPT-11	Sta. 124+00, west bank crest	37.412377 -122.069119	70
CPT-12	Sta. 134+00, west bank crest	37.415031 -122.068845	70
CPT-13	Sta. 144+00, west bank crest	37.417761 -122.068817	70
CPT-14	Sta. 153+50, west bank crest	37.420495 -122.068828	70
CPT-15	Sta. 159+00, west bank crest	37.421979 -122.068851	70
CPT-16	Sta. 165+00, west bank crest	37.423628 -122.068838	70
CPT-17	Sta. 147+00, east levee lower maintenance road	37.418545 -122.068364	37
CPT-18	Sta. 162+00, east levee lower maintenance road	37.422690 -122.068327	37

The CPT probes were backfilled with cement grout, as required by the District, and topped off with cold patch asphalt in paved areas.

3. LABORATORY TESTING

Geotechnical laboratory testing was conducted on selected soil samples recovered from the borings In order to evaluate properties of the samples. The laboratory testing program was developed by Geomatrix/AMEC. The tests performed are listed below. Some of the laboratory test results are presented on the boring logs. Graphic presentations of the results of the Atterberg limits, grain size distribution, triaxial unconsolidated undrained shear strength, triaxial consolidated undrained shear strength, and consolidation tests are presented in Appendix C.

Test	ASTM Designation
Moisture content & dry density	D2937 & D2216
Atterberg Limits	D4318
Grain size distribution, with or without hydrometer	D422
Percent passing #200 sieve	D1140
Triaxial UU	D2850
Triaxial CU	D4767 modified
Consolidation	D2435

LIMITATIONS

In providing our services for this project, we have endeavored to follow generally accepted principles and practices of the engineering geologic and geotechnical engineering professions in the area and at the time our services were performed. No warranty, express or implied, is provided.

Subsurface exploration is necessarily confined to selected locations and conditions may, and often do, vary between these locations.

The information presented in this report is applicable only to the specific project discussed. These data should not be used for other projects, sites or purposes unless they are reviewed by PGE or a qualified geotechnical professional.

Report prepared by,

PACIFIC GEOTECHNICAL ENGINEERING

REGISTERED PROFESSIONAL ENGINEER
CHALERM S. LIANG
GE 2031
EXP. 9-30-2009
GEOTECHNICAL
STATE OF CALIFORNIA

Chalerm (Beeson) Liang
GE 2031

Attachments: Figure 1 – Site Plan (North End)
Figure 2 – Site Plan (Center Portion)

Figure 3 – Site Plan (South End)

Appendix A – Keys to Soil Classification
Logs of borings (B-1 through B-4)

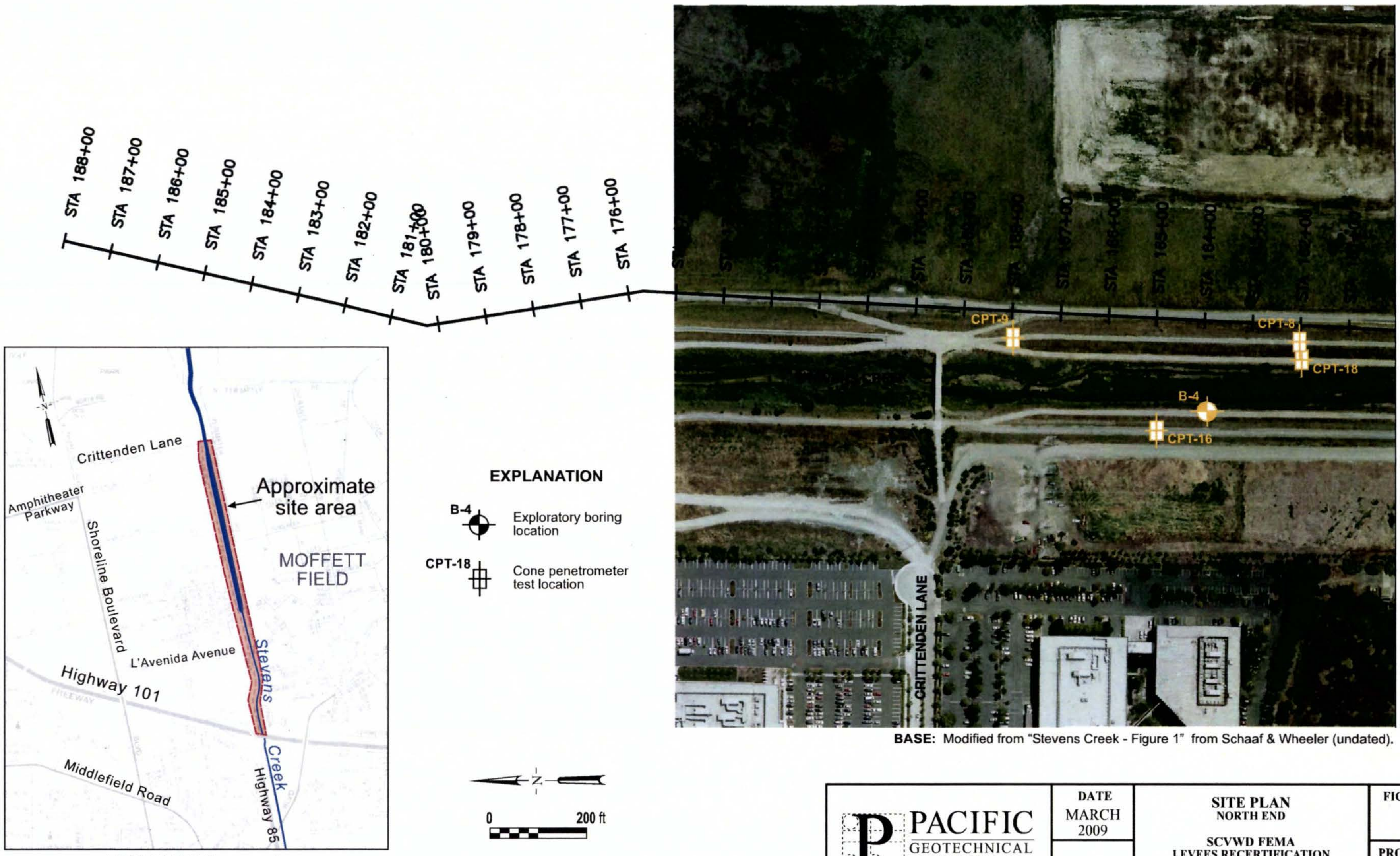
Appendix B – Cone Penetrometer Test Results (CPT-1 through CPT-18)

Appendix C – Laboratory test results

Figures C-1 thru C-3	Atterberg limits test results
Figures C-4 thru C-11	Grain size analysis test results
Figures C-12 and C-13	Triaxial unconsolidated undrained test results
Figures C-14 and C-15	Triaxial consolidated undrained test results
Figures C-16 and C-17	Consolidation test results

Appendix D – Letter on evaluation of drilling spoils, dated September 26, 2008

Copies: Addressee (2)
Jim French, Geomatrix/AMEC (2)



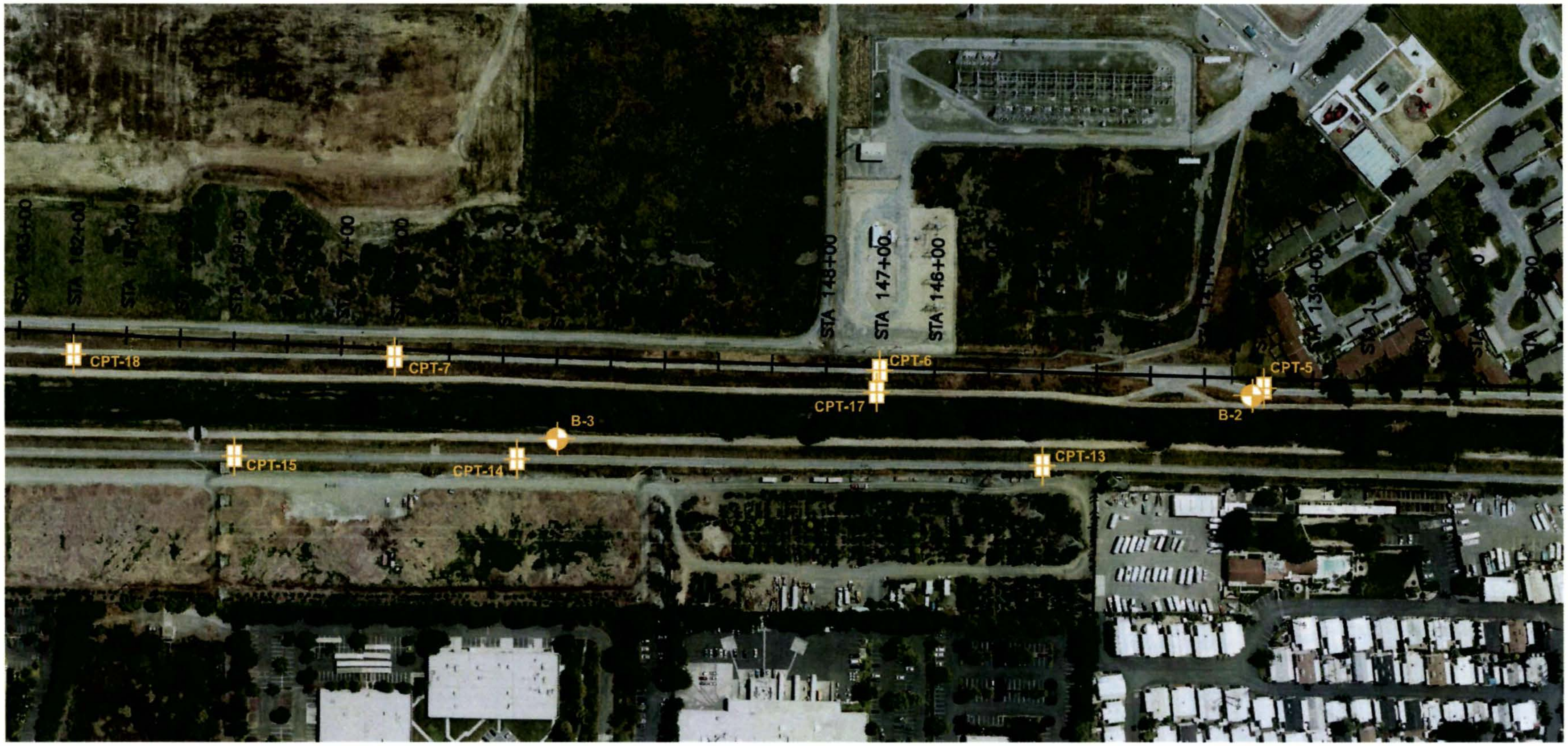
VICINITY MAP - no scale

EXPLANATION

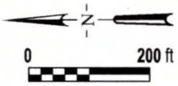
B-4	Exploratory boring location
CPT-18	Cone penetrometer test location

BASE: Modified from "Stevens Creek - Figure 1" from Schaaf & Wheeler (undated).

PACIFIC GEOTECHNICAL ENGINEERING	DATE MARCH 2009	SITE PLAN NORTH END SCVWD FEMA LEVEES RECERTIFICATION STEVENS CREEK MOUNTAIN VIEW, CALIFORNIA	FIGURE 1 PROJECT 2227E



BASE: Modified from "Stevens Creek - Figure 2" from Schaaf & Wheeler (undated).



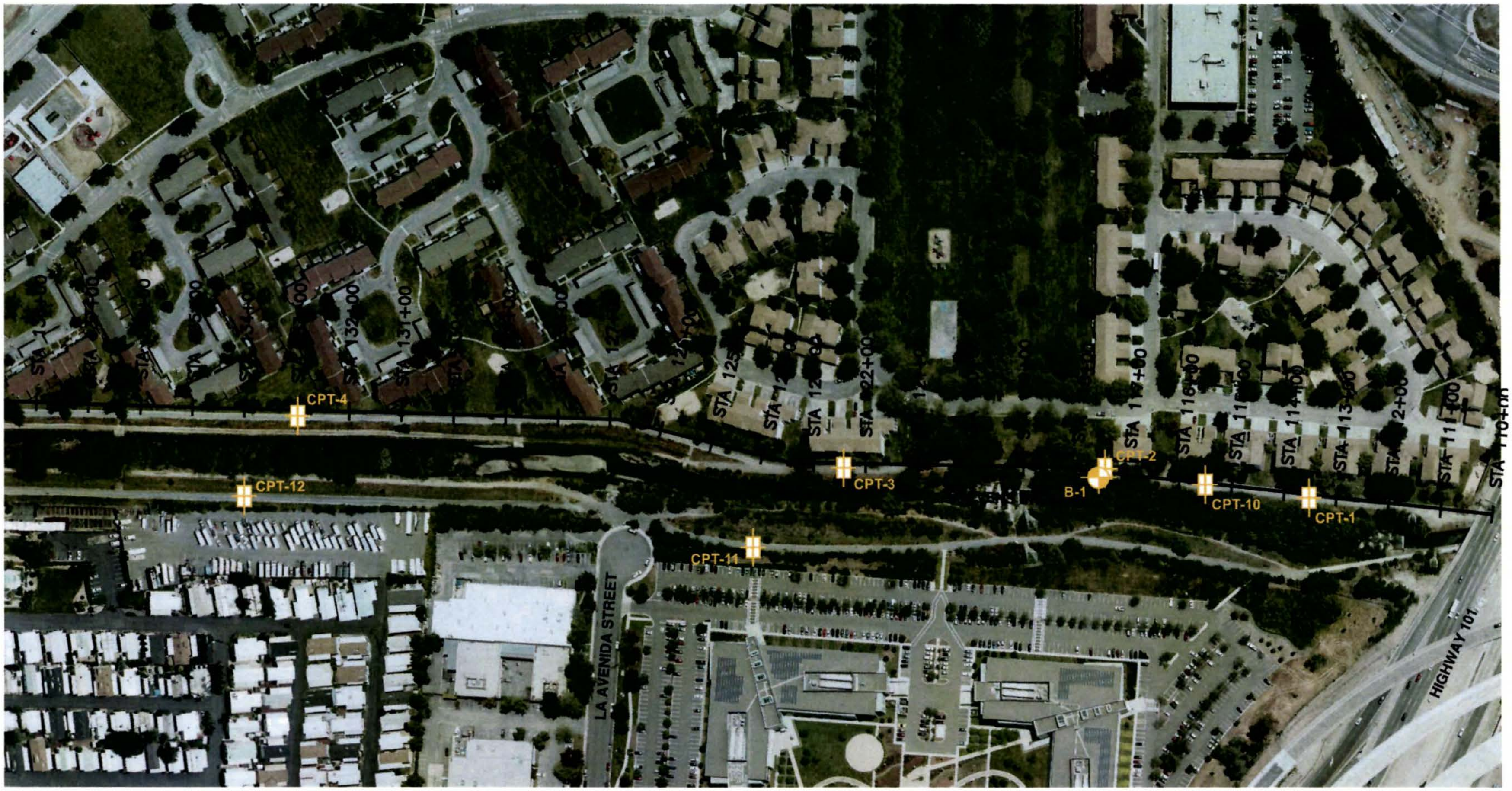
EXPLANATION

B-4 ⊕ Exploratory boring location

CPT-18 ⌗ Cone penetrometer test location

PACIFIC GEOTECHNICAL ENGINEERING

DATE		FIGURE
MARCH 2009	**SITE PLAN** **CENTER PORTION** **SCVWD FEMA** **LEVEES RECERTIFICATION** **STEVENS CREEK** **MOUNTAIN VIEW, CALIFORNIA**	2
		PROJECT
		2227E



BASE: Modified from "Stevens Creek - Figure 3" from Schaaf & Wheeler (undated).

EXPLANATION

N

0 200 ft

B-4 Exploratory boring location

CPT-18 Cone penetrometer test location

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DATE		FIGURE
MARCH 2009	**SITE PLAN** SOUTH END SCVWD FEMA LEVEES RECERTIFICATION STEVENS CREEK MOUNTAIN VIEW, CALIFORNIA	3
		PROJECT 2227E

APPENDIX A

KEYS TO SOIL CLASSIFICATION

AND

LOGS OF BORINGS

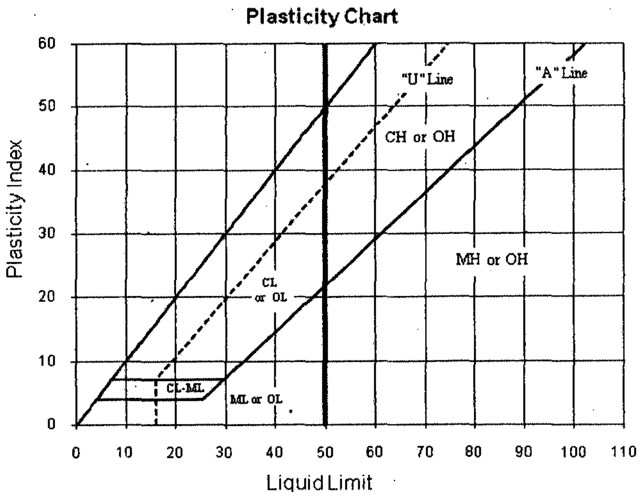
KEY TO SOIL CLASSIFICATION - FINE GRAINED SOILS
(50% OR MORE IS SMALLER THAN NO. 200 SIEVE SIZE)

MAJOR DIVISIONS			GROUP SYMBOLS	GROUP NAMES
SILTS AND CLAYS (Liquid Limit less than 50) Low Plasticity	Inorganic	PI < 4 or plots below “A” line	ML	Silt, Silt with Sand or Gravel, Sandy or Gravelly Silt, Sandy or Gravelly Silt with Sand or Gravel
	Inorganic	PI > 7 or plots on or above “A” line	CL	Lean Clay, Lean Clay with Sand or Gravel, Sandy or Gravelly Lean Clay, Sandy or Gravelly Lean Clay with Sand or Gravel
	Inorganic	PI between 4 and 7	CL-ML	Silty Clay, Silty Clay with Sand or Gravel, Sandy or Gravelly Silty Clay, Sandy or Gravelly Silty Clay with Sand or Gravel
	Organic	See footnote 3	OL	Organic Silt (below “A” Line) or Organic Clay (on or above “A” Line) (1,2)
SILTS AND CLAYS (Liquid Limit 50 or greater) High Plasticity	Inorganic	PI plots below “A” line	MH	Elastic Silt, Elastic Silt with Sand or Gravel, Sandy or Gravelly Elastic Silt, Sandy or Gravelly Elastic Silt with Sand or Gravel
	Inorganic	PI plots on or above “A” line	CH	Fat Clay, Fat Clay with Sand or Gravel, Sandy or Gravelly Fat Clay, Sandy or Gravelly Fat Clay with Sand or Gravel
	Organic	See note 3 below	OH	Organic Silt (below “A” Line) or Organic Clay (on or above “A” Line) (1,2)

1. If soil contains 15% to 29% plus No. 200 material, include “with sand” or “with gravel” to group name, whichever is predominant.
2. If soil contains ≥30% plus No. 200 material, include “sandy” or “gravelly” to group name, whichever is predominant. If soil contains ≥15% of sand or gravel sized material, add “with sand” or “with gravel” to group name.
3. Ratio of liquid limit of oven dried sample to liquid limit of not dried sample is less than 0.75.

CONSISTENCY	UNCONFINED SHEAR STRENGTH (KSF)	STANDARD PENETRATION (BLOWS/FOOT)
VERY SOFT	< 0.25	< 2
SOFT	0.25 – 0.5	2 – 4
FIRM	0.5 – 1.0	5 – 8
STIFF	1.0 – 2.0	9 – 15
VERY STIFF	2.0 – 4.0	16 – 30
HARD	> 4.0	> 30

MOISTURE	CRITERIA
Dry	Absence of moisture, dusty, dry to the touch
Moist	Damp, but no visible water
Wet	Visible free water, usually soil is below the water table



PACIFIC GEOTECHNICAL ENGINEERING

KEY TO SOIL CLASSIFICATION – COARSE GRAINED SOILS
(MORE THAN 50% IS LARGER THAN NO. 200 SIEVE SIZE)

MAJOR DIVISIONS			GROUP SYMBOLS	GROUP NAMES[1]
GRAVELS (more than 50% of coarse fraction is larger than No. 4 sieve size)	Gravels with less than 5% fines	Cu ≥ 4 and 1 ≤ Cc ≤ 3	GW	Well Graded Gravel, Well Graded Gravel with Sand
		Cu < 4 and/or 1 > Cc > 3	GP	Poorly Graded Gravel, Poorly Graded Gravel with Sand
	Gravels with 5% to 12% fines	ML or MH fines	GW-GM	Well Graded Gravel with Silt, Well Graded Gravel with Silt and Sand
			GP-GM	Poorly Graded Gravel with Silt, Poorly Graded Gravel with Silt and Sand
		CL or CH fines	GW-GC	Well Graded Gravel with Clay, Well Graded Gravel with Clay and Sand
			GP-GC	Poorly Graded Gravel with Clay, Poorly Graded Gravel with Clay and Sand
	Gravels with more than 12% fines	ML or MH fines	GM	Silty Gravel, Silty Gravel with Sand
		CL or CH fines	GC	Clayey Gravel, Clayey Gravel with Sand
		CL-ML fines	GC-GM	Silty Clayey Gravel; Silty, Clayey Gravel with Sand
SANDS (50% or more of coarse fraction is smaller than No. 4 sieve size)	Sands with less than 5% fines	Cu ≥ 6 and 1 ≤ Cc ≤ 3	SW	Well Graded Sand, Well Graded Sand with Gravel
		Cu < 6 and/or 1 > Cc > 3	SP	Poorly Graded Sand, Poorly Graded Sand with Gravel
	Sands with 5% to 12% fines	ML or MH fines	SW-SM	Well Graded Sand with Silt, Well Graded Sand with Silt and Gravel
			SP-SM	Poorly Graded Sand with Silt, Poorly Graded Sand with Silt and Gravel
		CL or CH fines	SW-SC	Well Graded Sand with Clay, Well Graded Sand with Clay and Gravel
			SP-SC	Poorly Graded Sand with Clay, Poorly Graded Sand with Clay and Gravel
	Sands with more than 12% fines	ML or MH fines	SM	Silty Sand, Silty Sand with Gravel
		CL or CH fines	SC	Clayey Sand, Clayey Sand with Gravel
		CL-ML fines	SC-SM	Silty, Clayey Sand; Silty, Clayey Sand with Gravel

US STANDARD SIEVES 3 Inch ¾ Inch No. 4 No. 10 No. 40 No. 200

	COARSE	FINE	COARSE	MEDIUM	FINE	
COBBLES & BOULDERS	GRAVELS		SANDS			SILTS AND CLAYS

RELATIVE DENSITY (SANDS AND GRAVELS)	STANDARD PENETRATION (BLOWS/FOOT)
Very Loose	0 - 4
Loose	5 – 10
Medium Dense	11 – 30
Dense	31 - 50
Very Dense	50+

1. Add "with sand" to group name if material contains 15% or greater of sand-sized particle. Add "with gravel" to group name if material contains 15% or greater of gravel-sized particle.

MOISTURE	CRITERIA
Dry	Absence of moisture, dusty, dry to the touch
Moist	Damp, but no visible water
Wet	Visible free water, usually soi is below the water table

PACIFIC GEOTECHNICAL ENGINEERING

DATE: 9/15/2008

LOG OF EXPLORATORY DRILL HOLE

BORING: B-1

PROJECT NAME: SCVWD Stevens Creek Levees FEMA Recertification **PROJECT NUMBER:** 2227E

DRILL RIG: CME 75, 140# auto hammer **LOGGED BY:** CSS

HOLE DIAMETER: 8" hollow stem auger **HOLE ELEVATION:** -----

SAMPLER:
D = 3" OD, 2½" ID Split-spoon
X = 2½" OD, 2" ID Split-spoon
I = Standard Penetrometer (2" OD SPT)
S = Slough in sample

GROUND WATER DEPTH:
Initial: Not measured
Final: 19 ft (10 min. after drilling)

DESCRIPTION OF EARTH MATERIALS Approx. Sta. 117+50, east bank crest	SOIL TYPE	DEPTH (ft)	SAMPLE	BLOWS PER FOOT	POCKET PEN (tsf)	% PASSING #200 SIEVE	LIQUID LIMIT	WATER CONTENT	PLASTICITY INDEX	DRY DENSITY (pcf)	FAILURE STRAIN (%)	UNCONFINED COMPRESSIVE STRENGTH (psf)
FILL: CLAYEY SAND with GRAVEL to CLAYEY GRAVEL with SAND: Mostly dark brown (7.5YR 3/4), moist, dense to very dense; fine to coarse angular sand and fine angular gravel, minor coarse gravel to cobbles	SC to GC	1	S D D	61								
		2										
		3	S D D	92/ 11"								
		4										
ALLUVIUM: CLAYEY SAND: Dark grayish brown (10YR 4/2), dry to moist, medium dense; mostly fine to medium subrounded to rounded sand	SC	5										
		6	S D D	21		27		5				
		7										
FAT CLAY: Black (10YR 2.1/1), moist, very stiff to hard	CH	8										
		9	S D D	35	4.5+		73	24	48	97		
		10										
		11										
		12										
		13										
		14	S D D	22	3 3.5			25		97		
LEAN CLAY: Gray (2.5Y 4/1), moist, stiff	CL	15										
		16										
LEAN CLAY with SAND: Dark gray to dark grayish brown (10YR 4/1 to 4/2), moist, firm to stiff, wtih fine sand	CL	17										
		18										
		19	S D D	12	1.3 1.1							
			T	Shelby tube		72	36	23	17			
		20	T	(250 psi, 18")				30		93		

PACIFIC GEOTECHNICAL ENGINEERING

DATE: 9/15/2008	**LOG OF EXPLORATORY DRILL HOLE**	**BORING: B-1**
PROJECT NAME: SCVWD Stevens Creek Levees FEMA Recertification		**PROJECT NUMBER:** 2227E
DRILL RIG: CME 75, 140# auto hammer		**LOGGED BY:** CSS
HOLE DIAMETER: 8" hollow stem auger		**HOLE ELEVATION:** -----
SAMPLER: D = 3" OD, 2½" ID Split-spoon X = 2½" OD, 2" ID Split-spoon I = Standard Penetrometer (2" OD SPT) S = Slough in sample	**GROUND WATER DEPTH:**	**Initial:** Not measured **Final:** 19 ft (10 min. after drilling)

DESCRIPTION OF EARTH MATERIALS Approx. Sta. 117+50, east bank crest	SOIL TYPE	DEPTH (ft)	SAMPLE	BLOWS PER FOOT	POCKET PEN (tsf)	% PASSING #200 SIEVE	LIQUID LIMIT	WATER CONTENT	PLASTICITY INDEX	DRY DENSITY (pcf)	FAILURE STRAIN (%)	UNCONFINED COMPRESSIVE STRENGTH (psf)
LEAN CLAY with SAND: (continued), grades slightly coarser with depth	CL		T	Shelby tube				26		98		TXCU (see Fig. C-14)
		21										
		22										
		23	S									
		24	D D	22	1.8 1.75			20		111		
* see Figure C-4 for sieve analysis results		25	S									
CLAYEY SAND: Greenish gray (Gley 1 3/1), moist, medium dense; fine to coarse sand	SC		I I	23		32*		16				
		26										
LEAN CLAY: Dark greenish gray (gley 1 3/GY), moist to wet,firm to very stiff; intervals of **LEAN CLAY with SAND** to **SANDY LEAN CLAY**	CL	27										
		28	S									TXUU
		29	D D	14	0.8 1.3		39	25	21	101	15	2886
		30										
		31										
		32										
		33	S									
		34	D D	23	1 2.7			22		104		
BOTTOM OF HOLE = 34.5 Feet Groundwater at 19 feet (10 minutes after completion of drilling)		35										
		36										
		37										
		38										
		39										
		40										

DATE: 9/15/2008	**LOG OF EXPLORATORY DRILL HOLE**	**BORING:** B-2

PROJECT NAME: SCVWD Stevens Creek Levees FEMA Recertification **PROJECT NUMBER:** 2227E

DRILL RIG: CME 75, 140# auto hammer **LOGGED BY:** CSS

HOLE DIAMETER: 4" cutting head with rods, mud rotary **HOLE ELEVATION:** ---

SAMPLER:
D = 3" OD, 2½" ID Split-spoon
X = 2½" OD, 2" ID Split-spoon
I = Standard Penetrometer (2" OD SPT)
S = Slough in sample

GROUND WATER DEPTH: **Initial:** mud rotary **Final:** ---

DESCRIPTION OF EARTH MATERIALS Approx. Sta. 140+00, east bank crest	SOIL TYPE	DEPTH (ft)	SAMPLE	BLOWS PER FOOT	POCKET PEN (tsf)	% PASSING #200 SIEVE	LIQUID LIMIT	WATER CONTENT	PLASTICITY INDEX	DRY DENSITY (pcf)	FAILURE STRAIN (%)	UNCONFINED COMPRESSIVE STRENGTH (psf)
FILL: SANDY LEAN CLAY to SANDY FAT CLAY: Very dark gray (10YR 3/1), moist, hard; with fine to coarse subangular sand; mostly fine subangular to angular gravel	CL/ CH	1 2	S D D	66								
ALLUVIUM: FAT CLAY: Very dark gray (2.5Y 3/1), moist, stiff to very stiff	CH	3 4	S D D	28	1.7- 3.2							
dark gray (2.5YR 4/1)		5 6 7	S D D	26	3 2		62	27	42	96		
FAT CLAY with SAND: Grayish brown (2.5Y 5/2) slightly mottled with dark yellowish brown (10YR 4/4), moist to wet, stiff; with fine sand; minor medium sand; trace of organic specks	CH	8 9 10 11	S D D	11	1.7 1.7	92		32		90	15	TXUU 2402
LEAN CLAY: Grayish brown (2.5Y 4/2) mottled with brown (7.5YR 4/4), moist to wet, stiff	CL	12 13 14 15 16	S D D	14	2.5 1.25			29		95		
LEAN CLAY: Very dark greenish gray (GLEY 1 3/5G), wet, firm	CL	17 18 19	S D	14	0.65			37		85	15	TXUU 1127
CLAYEY SAND (see next page)	SC	20	D		0.65	29*		16				

* see Figure C-5 for sieve analysis results

DATE: 9/15/2008	**LOG OF EXPLORATORY DRILL HOLE**	**BORING: B-2**

PROJECT NAME: SCVWD Stevens Creek Levees FEMA Recertification	**PROJECT NUMBER:** 2227E
DRILL RIG: CME 75, 140# auto hammer	**LOGGED BY:** CSS
HOLE DIAMETER: 4" cutting head with rods, mud rotary	**HOLE ELEVATION:** ---
SAMPLER: D = 3" OD, 2½" ID Split-spoon X = 2½" OD, 2" ID Split-spoon I = Standard Penetrometer (2" OD SPT) S = Slough in sample	**GROUND WATER DEPTH:** **Initial:** mud rotary **Final:** ---

DESCRIPTION OF EARTH MATERIALS Approx. Sta. 140+00, east bank crest	SOIL TYPE	DEPTH (ft)	SAMPLE	BLOWS PER FOOT	POCKET PEN (tsf)	% PASSING #200 SIEVE	LIQUID LIMIT	WATER CONTENT	PLASTICITY INDEX	DRY DENSITY (pcf)	FAILURE STRAIN (%)	UNCONFINED COMPRESSIVE STRENGTH (psf)
CLAYEY SAND: Dark grayish brown (10YR 4/2), moist to wet, loose to medium dense; fine to medium rounded sand	SC	21										
SANDY LEAN CLAY: Grayish brown (2.5Y 5/2), wet, firm to stiff; fine to coarse sand	CL	22		(250 psi, 6")								
		23	T	Shelby tube		55*		33				
			S									
LEAN CLAY with SAND: Light olive brown (2.5YR 5/3) mottled with strong brown (10YR 4/6), moist, very stiff; trace fine sand; grades slightly coarser with depth (maybe to LEAN CLAY with SAND); minor fine sand; color is mottled with depth	CL	24	D	14								
			D		2.5							
		25	T	Shelby tube (220 psi, 18")				27		96		
			T									
		26	T									
		27	T	Shelby tube		74	31	29	9	98		TXCU
* see Figure C-6 for sieve analysis results ** see Figure C-7 for sieve analysis results *** see Figure C-8 for sieve analysis results			T	(260 psi, 12")				32				(see Fig. C-15)
		28	S									
			D	13	1.8							
		29	D									
CLAYEY SAND: Grayish brown (2.5Y 5/2) to light olive brown (2.5Y 5/4), moist to wet, medum dense, fine to coarse sand	SC		S									
		30	I	10		30**			20			
			I									
CLAYEY SAND: Light olive brown (2.5Y 5/3), moist to wet, loose to medium dense; fine to coarse subrounded to rounded sand	SC	31										
		32										
		33										
			S									
SANDY LEAN CLAY: Light olive brown (2.5Y 5/4), moist, firm, with fine to coarse sand	CL	34	I	4		59***	27	21	7			
			I									
		35										
LEAN CLAY to LEAN CLAY with SAND: Dark gray (2.5Y 4/1) to dark grayish brown (2.5Y 4/2), moist to wet, very stiff; with fine to coarse sand	CL	36										
		37										
		38	S									
thin clayey sand lens		39	D	30	2.5							
			D		2			16		119		
		40										

DATE: 9/15/2008	**LOG OF EXPLORATORY DRILL HOLE**	**BORING: B-2**

PROJECT NAME: SCVWD Stevens Creek Levees FEMA Recertification **PROJECT NUMBER:** 2227E

DRILL RIG: CME 75, 140# auto hammer **LOGGED BY:** CSS

HOLE DIAMETER: 4" cutting head with rods, mud rotary **HOLE ELEVATION:** ---

SAMPLER:
D = 3" OD, 2½" ID Split-spoon
X = 2½" OD, 2" ID Split-spoon
I = Standard Penetrometer (2" OD SPT)
S = Slough in sample

GROUND WATER DEPTH: **Initial:** mud rotary **Final:** ---

DESCRIPTION OF EARTH MATERIALS Approx. Sta. 140+00, east bank crest	SOIL TYPE	DEPTH (ft)	SAMPLE	BLOWS PER FOOT	POCKET PEN (tsf)	% PASSING #200 SIEVE	LIQUID LIMIT	WATER CONTENT	PLASTICITY INDEX	DRY DENSITY (pcf)	FAILURE STRAIN (%)	UNCONFINED COMPRESSIVE STRENGTH (psf)
LEAN CLAY with SAND (continued)	CL											
		41										
		42										
brown (10YR 4/3), moist to wet; stiff		43	S									
		44	D D	18	1.25 1							
		45	T	Shelby tube (350 psi, 9")								TXUU
		46	T			81	46	26	24	98	13	3087
grades coarser with depth												
SANDY LEAN CLAY: Light yellowish brown (2.5Y 6/3) with minor spots of gray (2.5Y 6/1), moist to wet, stiff; fine sand	CL	47										
		48	S									
		49	D D	16		57		25		103		
		50										
		51										
FAT CLAY: Dark grayish brown (2.5Y 4/2), moist, very stiff	CH	52										
sand content is variable		53	S									
		54	D D	46	poor recovery 3.75			22		108		
		55										
		56										
		57										
		58	S									
dark yellowish brown (10YR 4/4) mottled with gray (10YR 5/1)		59	D D	46	poor recovery 4.1			22		108		
		60										

DATE: 9/15/2008

LOG OF EXPLORATORY DRILL HOLE

BORING: B-2

PROJECT NAME: SCVWD Stevens Creek Levees FEMA Recertification **PROJECT NUMBER:** 2227E

DRILL RIG: SCVWD Stevens Creek Levees FEMA Recertification **LOGGED BY:** CSS

HOLE DIAMETER: 4" cutting head with rods, mud rotary **HOLE ELEVATION:** ---

SAMPLER:
D = 3" OD, 2½" ID Split-spoon
X = 2½" OD, 2" ID Split-spoon
I = Standard Penetrometer (2" OD SPT)
S = Slough in sample

GROUND WATER DEPTH: **Initial:** mud rotary **Final:** ---

DESCRIPTION OF EARTH MATERIALS Approx. Sta. 140+00, east bank crest	SOIL TYPE	DEPTH (ft)	SAMPLE	BLOWS PER FOOT	POCKET PEN (tsf)	% PASSING #200 SIEVE	LIQUID LIMIT	WATER CONTENT	PLASTICITY INDEX	DRY DENSITY (pcf)	FAILURE STRAIN (%)	UNCONFINED COMPRESSIVE STRENGTH (psf)
FAT CLAY (continued):	CH											
		61										
		62										
		63										
mottled dark gray (10YR 4/1) and very dark gray (10YR 3/1); grades coarser with depth		64	S D D	48	2.75 3.75		52	27	33	100		
		65										
		66										
SANDY LEAN CLAY: Dark bluish gray (GLEY 2 4/10B) mottled with dark yellowish brown (10YR 3/4), wet, very stiff; with fine sand	CL	67										
		68										
		69	S D D	21	2.5 2.6	59		22		104		
BOTTOM OF HOLE = 69.5 Feet Groundwater level was not measured because of mud rotary drilling		70										
		71										
		72										
		73										
		74										
		75										
		76										
		77										
		78										
		79										
		80										

DATE: 9/16/2008	**LOG OF EXPLORATORY DRILL HOLE**	**BORING:** B-3

PROJECT NAME: SCVWD Stevens Creek Levees FEMA Recertification **PROJECT NUMBER:** 2227E

DRILL RIG: CME 75, 140# auto hammer **LOGGED BY:** CSS

HOLE DIAMETER: 8" hollow stem auger **HOLE ELEVATION:** ---

SAMPLER:
D = 3" OD, 2½" ID Split-spoon
X = 2½" OD, 2" ID Split-spoon
I = Standard Penetrometer (2" OD SPT)
S = Slough in sample

GROUND WATER DEPTH:
Initial: Not measured
Final: 6.5 ft (1.5 hrs. after drilling)

DESCRIPTION OF EARTH MATERIALS Approx. Sta. 153+50, west bank inboard maintenance	SOIL TYPE	DEPTH (ft)	SAMPLE	BLOWS PER FOOT	POCKET PEN (tsf)	% PASSING #200 SIEVE	LIQUID LIMIT	WATER CONTENT	PLASTICITY INDEX	DRY DENSITY (pcf)	FAILURE STRAIN (%)	UNCONFINED COMPRESSIVE STRENGTH (psf)
FILL: CLAYEY GRAVEL with SAND: Imported road base; angular fine to coarse sand and gravel	GC											
		1	S D	31	4.5+ 4.5+							
LEAN CLAY with SAND to SANDY LEAN CLAY: Brown (10YR 4/3), moist, hard; with mostly fine sand	CL	2	D S									
		3	D D	16	4.5+ 2			23		99		
ALLUVIUM: Inter layered FAT CLAY, SILTY SAND and CLAYEY SAND: Very dark greenish gray (Gley1 3/5GY), moist to wet, stiff to hard clay to medium dense sand; fine-grained sand	CH, SM, SC	4										
		5	S D					26		93		
		6	D	12	4.5+							
FAT CLAY: Dark grayish brown (10YR 4/2), moist to wet, stiff; minor intervals of clay with fine-grained sand	CH	7										
		8										
		9										
		10	S D		1.75							
		11	D	18	1			28		96		
		12										
		13										
		14										
		15	S D				50	38	22			TXUU
dark yellowish brown (10YR 4/4)		16	D	10	1.25			36		85	15	1710
		17										
		18										
		19										
grayish brown (2.5Y 5/2)		20										

DATE: 9/16/2008	**LOG OF EXPLORATORY DRILL HOLE**	**BORING:** B-3

PROJECT NAME: SCVWD Stevens Creek Levees FEMA Recertification **PROJECT NUMBER:** 2227E

DRILL RIG: CME 75, 140# auto hammer **LOGGED BY:** CSS

HOLE DIAMETER: 8" hollow stem auger **HOLE ELEVATION:** ---

SAMPLER:
D = 3" OD, 2½" ID Split-spoon
X = 2½" OD, 2" ID Split-spoon
I = Standard Penetrometer (2" OD SPT)
S = Slough in sample

GROUND WATER DEPTH: **Initial:** Not measured **Final:** 6.5 ft (1.5 hrs. after drilling)

DESCRIPTION OF EARTH MATERIALS Approx. Sta. 153+50, west bank inboard maintenance road	SOIL TYPE	DEPTH (ft)	SAMPLE	BLOWS PER FOOT	POCKET PEN (tsf)	% PASSING #200 SIEVE	LIQUID LIMIT	WATER CONTENT	PLASTICITY INDEX	DRY DENSITY (pcf)	FAILURE STRAIN (%)	UNCONFINED COMPRESSIVE STRENGTH (psf)
FAT CLAY (continued):	CH		S									
		21	D	32	3							
			D					23		105		
		22										
		23										
		24										
Dark grayish brown (2.5YR 4/2), mottled with dark greenish gray (Gley 2 4/5 BG); stiff to very stiff; wetness increases with depth		25	S									
		26	D	26	1.75							
			D		2.6			23		108		
		27										
		28										
LEAN CLAY with SAND: Olive brown (2.5YR 4/3), wet, very soft; with fine sand	CL	29										
		30	S									
		31	D	16	0.25							
CLAYEY SAND: Olive brown (2.5YR 4/3), moist, medium dense; mostly fine sand	SC		D			36*		19		114		
* see Figure C-9 for sieve analysis results		32										
BOTTOM OF HOLE = 31.5 Feet Groundwater at 6-1/2 feet (1.5 hours after completion of drilling)		33										
		34										
		35										
		36										
		37										
		38										
		39										
		40										

DATE: 9/16/2008	**LOG OF EXPLORATORY DRILL HOLE**	**BORING:** B-4

PROJECT NAME: SCVWD Stevens Creek Levees FEMA Recertification	**PROJECT NUMBER:** 2227E
DRILL RIG: CME 75, 140# auto hammer	**LOGGED BY:** CSS
HOLE DIAMETER: 8" hollow stem auger	**HOLE ELEVATION:** ---
SAMPLER: D = 3" OD, 2½" ID Split-spoon X = 2½" OD, 2" ID Split-spoon I = Standard Penetrometer (2" OD SPT) S = Slough in sample	**GROUND WATER DEPTH:** **Initial:** --- **Final:** 7.9 ft (10 min. after drilling)

DESCRIPTION OF EARTH MATERIALS Approx. Sta. 164+00, west bank inboard maintenance road	SOIL TYPE	DEPTH (ft)	SAMPLE	BLOWS PER FOOT	POCKET PEN (tsf)	% PASSING #200 SIEVE	LIQUID LIMIT	WATER CONTENT	PLASTICITY INDEX	DRY DENSITY (pcf)	FAILURE STRAIN (%)	UNCONFINED COMPRESSIVE STRENGTH (psf)
FILL: CLAYEY GRAVEL with SAND: Imported road base	GC											
CLAYEY SAND: Brown (10YR 4/3), moist, medium dense; rounded fine to coarse sand	SC	1	S D	27								
		2	D S									
LEAN CLAY with SAND: Mottled very dark gray (10YR 3/1), moist, stiff; with fine sand; root or wood fragment at 4 feet; grades slightly coarser with depth	CL	3	D D	13	1.5			17		113		
		4										
		5	S									
CLAYEY SAND: Black (2.5Y 2.5/1), moist to wet, loose; rounded medium to coarse sand in a clayey sand (fine sand) matrix	SC	6	D D	15	1.7 2							
FAT CLAY: Black (2.5Y 2.5/1), moist, very stiff; grades coarser and wetter with depth	CH	7										
		8										
wet, soft to very soft		9										
		10	S D		0.5							
SILTY SAND to CLAYEY SAND: Very dark gray (2.5Y 3/1), wet, loose; fine sand; very	SM/SC	11	D S	6								
color change to olive brown (2.5Y 4/3)		12	I I	5		44*	22	22	5			
* see Figure C-10 for sieve analysis results		13										
LEAN CLAY to FAT CLAY with SAND: Mottled dark yellowish brown (10YR 4/3), moist to wet, firm; with fine sand	CL/CH	14										
		15	S D D	13	0.6 0.5			28		96	15	TXUU 1642
		16										
		17										
		18										
		19										
		20										

PACIFIC GEOTECHNICAL ENGINEERING

DATE: 9/16/2008	**LOG OF EXPLORATORY DRILL HOLE**	**BORING:** B-4

PROJECT NAME: SCVWD Stevens Creek Levees FEMA Recertification **PROJECT NUMBER:** 2227E

DRILL RIG: CME 75, 140# auto hammer **LOGGED BY:** CSS

HOLE DIAMETER: 8" hollow stem auger **HOLE ELEVATION:** ---

SAMPLER:
D = 3" OD, 2½" ID Split-spoon
X = 2½" OD, 2" ID Split-spoon
I = Standard Penetrometer (2" OD SPT)
S = Slough in sample

GROUND WATER DEPTH: **Initial:** --- **Final:** 7.9 ft (10 min. after drilling)

DESCRIPTION OF EARTH MATERIALS Approx. Sta. 164+00, west bank inboard maintenance road	SOIL TYPE	DEPTH (ft)	SAMPLE	BLOWS PER FOOT	POCKET PEN (tsf)	% PASSING #200 SIEVE	LIQUID LIMIT	WATER CONTENT	PLASTICITY INDEX	DRY DENSITY (pcf)	FAILURE STRAIN (%)	UNCONFINED COMPRESSIVE STRENGTH (psf)
LEAN CLAY to FAT CLAY with SAND: (continued)	CL/ CH	21	S D D	24	2.5	79		24		105		
		22										
WELL GRADED SAND with GRAVEL and CLAY: Dark yellowish brown (10YR 3/4 to 4/6), wet, dense; mostly fine to coarse rounded sand with fine gravel * see Figure C-11 for sieve analysis results	SW-SC	23										
		24										
		25										
		26	S D	50/6"		9*		10		132		
		27										
LEAN CLAY: Mottled dark yellowish brown (10YR 4/4), moist, stiff to very stiff	CL	28										
		29										
		30										
		31	S D D	37	1.5 2.6		36	21	17	107		
BOTTOM OF HOLE = 31.5 Feet Groundwater at 7.9 feet (10 minutes after completion of drilling)		32										
		33										
		34										
		35										
		36										
		37										
		38										
		39										
		40										

PACIFIC GEOTECHNICAL ENGINEERING **PAGE:** 2 of 2

APPENDIX B

CONE PENETROMETER TEST RESULTS

PROJECT: LEVEES - STEVENS CREEK
LOCATION: Mountain View CA
PROJ. NO.: 2227E(PGE-04)
Terminated at 37.0 feet

CPT NO.: CPT-1
DATE : 09-09-2008
TIME : 13:46:24
Groundwater measured at 18.5 feet

PACIFIC GEOTECHNICAL
cpts by John Sarmiento & Associates

DEPTH (feet)	Qc (tsf)	Qc' (tsf)	Fs (tsf)	Rf (%)	SPT (N)	SPT' (N')	EffVtStr (ksf)	PHI (deg.)	SU (ksf)	SOIL BEHAVIOR TYPE	DENSITY RANGE (pcf)
0.54	435.3	696.48	4.25	1.0	87	139	0.06	>48	----	SAND	120-130
1.05	454.6	727.36	7.39	1.6	91	145	0.13	>48	----	"	130-140
1.50	442.7	708.32	7.05	1.6	89	142	0.19	>48	----	"	"
2.01	364.5	583.20	8.07	2.2	73	117	0.26	>48	----	"	"
2.52	456.9	731.04	6.29	1.4	91	146	0.33	>48	----	"	"
3.02	452.8	724.48	5.23	1.2	91	145	0.40	>48	----	"	"
3.51	336.5	538.40	8.96	2.7	168	269	0.46	48	----	SAND to Clayey SAND *	130-140
4.05	84.3	134.88	4.60	5.5	84	135	0.54	----	11.20	Very Stiff Fine Grained *	"
4.52	27.8	44.48	2.04	7.3	28	44	0.60	----	3.67	CLAY	"
5.00	16.8	26.88	1.02	6.1	17	27	0.66	----	2.20	"	"
5.51	14.7	23.52	0.66	4.5	15	24	0.73	----	1.91	"	120-130
6.01	14.9	23.84	0.67	4.5	15	24	0.79	----	1.93	"	"
6.57	14.9	22.94	0.73	4.9	15	23	0.86	----	1.93	"	"
7.06	20.1	29.62	0.89	4.4	20	30	0.93	----	2.62	"	130-140
7.56	19.6	27.56	0.89	4.5	20	28	0.99	----	2.55	"	"
8.05	19.9	27.23	0.94	4.7	20	27	1.06	----	2.58	"	"
8.55	18.7	24.99	0.82	4.4	19	25	1.12	----	2.42	"	120-130
9.03	15.8	20.62	0.71	4.5	16	21	1.18	----	2.03	"	"
9.52	14.9	18.97	0.73	4.9	15	19	1.24	----	1.90	"	"
10.01	16.5	20.52	0.86	5.2	17	21	1.31	----	2.11	"	"
10.50	15.0	18.21	0.83	5.5	15	18	1.37	----	1.91	"	"
11.01	13.3	15.74	0.74	5.6	13	16	1.43	----	1.68	"	"
11.50	12.7	14.66	0.64	5.0	13	15	1.49	----	1.59	"	"
12.08	12.4	13.97	0.65	5.2	12	14	1.56	----	1.55	"	"
12.58	14.9	16.46	0.78	5.2	15	16	1.63	----	1.88	"	"
13.07	10.3	11.15	0.57	5.5	10	11	1.69	----	1.58	"	"
13.55	14.4	15.27	0.65	4.5	14	15	1.75	----	1.80	"	"
14.04	20.7	21.63	0.97	4.7	21	22	1.81	----	2.64	"	130-140
14.53	21.7	22.33	0.85	3.9	14	15	1.88	----	2.77	Silty CLAY to CLAY	"
15.02	21.9	22.18	1.28	5.8	22	22	1.95	----	2.79	CLAY	"
15.53	18.1	18.09	1.00	5.5	18	18	2.01	----	2.28	"	"
16.01	10.2	10.18	0.52	5.1	10	10	2.08	----	1.53	"	120-130
16.58	6.3	6.28	0.30	4.8	6	6	2.13	----	1.05	"	100-110
17.06	4.8	4.78	0.26	5.4	5	5	2.18	----	0.74	"	"
17.55	6.2	6.17	0.28	4.5	6	6	2.24	----	1.02	"	"
18.03	7.0	6.96	0.28	4.0	7	7	2.29	----	1.17	"	"
18.58	9.2	9.14	0.36	3.9	9	9	2.32	----	1.34	"	110-120
19.08	12.1	12.02	0.42	3.5	8	8	2.35	----	1.45	Silty CLAY to CLAY	120-130
19.56	55.3	54.88	2.21	4.0	28	27	2.38	----	7.21	Clayey SILT to Silty CLAY	130-140
20.04	63.8	63.27	2.38	3.7	32	32	2.42	----	8.34	"	"
20.52	38.1	37.76	1.57	4.1	19	19	2.45	----	4.91	"	"
21.08	30.5	30.20	1.38	4.5	20	20	2.49	----	3.89	Silty CLAY to CLAY	"
21.54	33.2	32.59	1.93	5.8	33	33	2.53	----	4.24	CLAY	"
22.06	57.2	55.42	2.38	4.2	29	28	2.56	----	7.44	Clayey SILT to Silty CLAY	"
22.59	25.5	24.39	1.23	4.8	26	24	2.60	----	3.21	CLAY	"
23.02	19.2	18.19	0.84	4.4	19	18	2.63	----	2.36	"	120-130
23.54	13.7	12.83	0.52	3.8	9	9	2.66	----	1.63	Silty CLAY to CLAY	"
24.07	30.8	28.46	1.66	5.4	31	28	2.70	----	3.90	CLAY	130-140
24.51	89.0	81.43	0.89	1.0	22	20	2.73	37	----	SAND to Silty SAND	120-130
25.07	110.3	99.45	1.53	1.4	28	25	2.77	38	----	"	130-140
25.51	231.7	207.12	1.70	0.7	46	41	2.79	42	----	SAND	110-120
26.01	326.9	289.36	2.02	0.6	54	48	2.82	44	----	Gravelly SAND to SAND	"
26.50	333.5	292.37	1.78	0.5	56	49	2.84	44	----	"	"
27.09	272.4	236.04	1.77	0.6	54	47	2.87	43	----	SAND	"
27.58	335.9	288.74	1.55	0.5	56	48	2.90	44	----	Gravelly SAND to SAND	100-110

PROJECT: LEVEES - STEVENS CREEK
LOCATION: Mountain View CA
PROJ. NO.: 2227E(PGE-04)
Terminated at 37.0 feet

CPT NO.: CPT-1
DATE : 09-09-2008
TIME : 13:46:24
Groundwater measured at 18.5 feet

PACIFIC GEOTECHNICAL
cpts by John Sarmiento & Associates

DEPTH (feet)	Qc (tsf)	Qc' (tsf)	Fs (tsf)	Rf (%)	SPT (N)	SPT' (N')	EffVtStr (ksf)	PHI (deg.)	SU (ksf)	SOIL BEHAVIOR TYPE	DENSITY RANGE (pcf)
28.08	311.9	265.92	1.21	0.4	52	44	2.92	44	----	Gravelly SAND to SAND	100-110
28.58	169.9	143.66	0.65	0.4	34	29	2.94	40	----	SAND	"
29.01	26.1	21.80	1.21	4.6	26	22	2.97	----	3.24	CLAY	130-140
29.53	15.6	12.87	0.55	3.5	10	9	3.00	----	1.83	Silty CLAY to CLAY	120-130
30.05	17.6	14.45	0.63	3.6	12	10	3.03	----	2.09	"	"
30.58	14.4	11.77	0.55	3.8	10	8	3.07	----	1.66	"	"
31.03	11.5	9.37	0.34	3.0	8	6	3.09	----	1.59	"	110-120
31.55	10.4	8.44	0.26	2.5	5	4	3.12	----	1.40	Clayey SILT to Silty CLAY	"
32.00	10.0	8.09	0.28	2.8	7	5	3.14	----	1.33	Silty CLAY to CLAY	"
32.54	11.9	9.58	0.25	2.1	6	5	3.17	----	1.64	Clayey SILT to Silty CLAY	"
33.09	12.5	10.03	0.33	2.6	6	5	3.20	----	1.39	"	"
33.54	14.9	11.91	0.33	2.2	7	6	3.22	----	1.71	"	"
34.08	13.8	10.99	0.32	2.3	7	5	3.25	----	1.56	"	"
34.50	13.2	10.47	0.25	1.9	7	5	3.27	----	1.47	"	"
35.05	14.1	11.13	0.74	5.2	14	11	3.31	----	1.59	CLAY	120-130
35.58	94.0	73.81	1.69	1.8	31	25	3.35	36	----	Silty SAND to Sandy SILT	130-140
36.02	92.7	72.49	1.22	1.3	23	18	3.37	36	----	SAND to Silty SAND	120-130
36.56	25.3	19.67	1.21	4.8	25	20	3.41	----	3.07	CLAY	130-140
37.00	30.3	23.45	0.79	2.6	12	9	3.45	----	3.73	Sandy SILT to Clayey SILT	"

DEPTH = Sampling interval (.1 feet)
Qc = Tip bearing resistance TotStr = Total Stress using est. density**
Fs = Sleeve friction resistance Phi = Soil friction angle*
Rf = Tip/Sleeve ratio Su = Undrained Soil Strength* (Nk=10 for Qc<9 tsf)
SPT = Equivalent Standard Penetration Test* (Nk=12 for Qc=9 to 12 tsf) (Nk=15 for Qc>12 tsf)
References: * Robertson and Campanella, 1988
** Olsen, 1989 *** Durgunoglu & Mitchell, 1975

PROJECT: LEVEES - STEVENS CREEK
LOCATION: Mountain View CA
PROJ. NO.: 2227E(PGE-04)
Terminated at 35.0 feet

CPT NO.: CPT-2
DATE : 09-09-2008
TIME : 14:52:31
Groundwater measured at 19.2 feet

PACIFIC GEOTECHNICAL
cpts by John Sarmiento & Associates

DEPTH (feet)	Qc (tsf)	Qc' (tsf)	Fs (tsf)	Rf (%)	SPT (N)	SPT' (N')	EffVtStr (ksf)	PHI (deg.)	SU (ksf)	SOIL BEHAVIOR TYPE	DENSITY RANGE (pcf)
0.50	166.9	267.04	1.27	0.8	33	53	0.06	44	----	SAND	110-120
1.01	470.4	752.64	5.74	1.2	94	151	0.13	>48	----	"	130-140
1.50	648.0	1036.8	5.97	0.9	108	173	0.19	>48	----	Gravelly SAND to SAND	120-130
2.04	737.3	1179.7	6.98	0.9	123	197	0.26	>48	----	"	"
2.50	663.5	1061.6	9.42	1.4	133	212	0.32	>48	----	SAND	130-140
3.01	523.9	838.24	4.66	0.9	87	140	0.38	>48	----	Gravelly SAND to SAND	120-130
3.52	513.1	820.96	6.35	1.2	103	164	0.45	>48	----	SAND	130-140
4.01	434.6	695.36	6.51	1.5	87	139	0.52	>48	----	"	"
4.51	541.7	866.72	8.61	1.6	108	173	0.58	>48	----	"	130-140
5.02	223.8	358.08	4.38	2.0	56	90	0.65	45	----	SAND to Silty SAND	"
5.52	108.9	174.24	2.22	2.0	36	58	0.72	41	----	Silty SAND to Sandy SILT	"
6.04	90.0	144.00	2.66	3.0	36	58	0.79	----	11.95	Sandy SILT to Clayey SILT	"
6.53	93.0	143.60	2.45	2.6	37	57	0.86	----	12.34	"	"
7.01	84.7	125.26	3.07	3.6	34	50	0.92	----	11.23	"	"
7.52	98.3	138.64	3.49	3.6	39	55	0.99	----	13.04	"	"
8.04	77.6	106.21	1.66	2.1	26	35	1.06	38	----	Silty SAND to Sandy SILT	"
8.50	43.5	58.13	2.07	4.8	29	39	1.12	----	5.73	Silty CLAY to CLAY	"
9.00	36.1	46.98	1.62	4.5	24	31	1.19	----	4.73	"	"
9.55	32.4	40.94	1.52	4.7	22	27	1.26	----	4.24	"	"
10.03	33.1	40.79	1.48	4.5	22	27	1.33	----	4.32	"	"
10.52	32.2	38.65	1.35	4.2	21	26	1.39	----	4.20	"	"
11.02	24.7	28.85	1.11	4.5	16	19	1.46	----	3.20	"	"
11.52	35.6	40.57	1.18	3.3	18	20	1.53	----	4.64	Clayey SILT to Silty CLAY	"
12.01	30.4	33.91	1.32	4.3	20	23	1.60	----	3.95	Silty CLAY to CLAY	"
12.52	28.4	30.97	1.19	4.2	19	21	1.66	----	3.68	"	"
13.02	26.4	28.16	1.11	4.2	18	19	1.73	----	3.40	"	"
13.51	25.0	26.21	1.01	4.0	17	17	1.80	----	3.21	"	"
14.07	22.6	23.28	0.87	3.8	15	16	1.87	----	2.89	"	"
14.56	27.5	27.90	0.88	3.2	14	14	1.94	----	3.54	Clayey SILT to Silty CLAY	"
15.05	21.4	21.40	0.88	4.1	14	14	2.01	----	2.72	Silty CLAY to CLAY	"
15.52	23.8	23.77	0.90	3.8	16	16	2.07	----	3.04	"	"
16.02	22.2	22.14	0.95	4.3	15	15	2.14	----	2.82	"	"
16.51	20.8	20.72	0.84	4.0	14	14	2.20	----	2.63	"	"
17.00	20.3	20.19	0.83	4.1	14	13	2.26	----	2.56	"	120-130
17.57	15.3	15.20	0.62	4.1	15	15	2.34	----	1.88	CLAY	"
18.06	15.2	15.08	0.53	3.5	10	10	2.40	----	1.87	Silty CLAY to CLAY	"
18.56	14.1	13.97	0.57	4.0	14	14	2.46	----	1.72	CLAY	"
19.00	13.0	12.81	0.47	3.6	9	9	2.51	----	1.57	Silty CLAY to CLAY	"
19.57	10.6	10.34	0.47	4.4	11	10	2.54	----	1.55	CLAY	110-120
20.00	10.5	10.16	0.42	4.0	11	10	2.57	----	1.53	"	"
20.56	12.1	11.57	0.43	3.6	8	8	2.60	----	1.43	Silty CLAY to CLAY	120-130
21.07	14.4	13.62	0.55	3.8	10	9	2.63	----	1.74	"	"
21.56	20.2	18.87	1.10	5.4	20	19	2.67	----	2.50	CLAY	130-140
22.05	23.6	21.76	1.03	4.4	16	15	2.71	----	2.95	Silty CLAY to CLAY	"
22.55	22.9	20.84	0.86	3.8	15	14	2.74	----	2.86	"	"
23.04	22.3	20.03	1.04	4.7	22	20	2.78	----	2.77	CLAY	"
23.53	23.4	20.75	0.90	3.8	16	14	2.81	----	2.91	Silty CLAY to CLAY	"
24.00	25.2	22.06	1.07	4.2	17	15	2.85	----	3.15	"	"
24.55	52.0	44.85	3.16	6.1	52	45	2.89	----	6.72	CLAY	"
25.00	44.7	38.06	3.15	7.0	45	38	2.92	----	5.74	"	"
25.53	148.9	124.90	2.25	1.5	37	31	2.96	39	----	SAND to Silty SAND	"
26.04	180.4	149.42	2.08	1.2	36	30	2.99	40	----	SAND	120-130
26.53	265.0	218.15	2.03	0.8	53	44	3.02	42	----	"	110-120
27.06	186.5	152.93	1.45	0.8	37	31	3.04	40	----	"	"
27.53	57.4	46.84	2.07	3.6	29	23	3.08	----	7.41	Clayey SILT to Silty CLAY	130-140

PROJECT: LEVEES - STEVENS CREEK
LOCATION: Mountain View CA
PROJ. NO.: 2227E(PGE-04)
Terminated at 35.0 feet

CPT NO.: CPT-2
DATE : 09-09-2008
TIME : 14:52:31
Groundwater measured at 19.2 feet

PACIFIC GEOTECHNICAL
cpts by John Sarmiento & Associates

DEPTH (feet)	Qc (tsf)	Qc' (tsf)	Fs (tsf)	Rf (%)	SPT (N)	SPT' (N')	EffVtStr (ksf)	PHI (deg.)	SU (ksf)	SOIL BEHAVIOR TYPE	DENSITY RANGE (pcf)
28.06	24.9	20.21	0.95	3.8	17	13	3.12	----	3.07	Silty CLAY to CLAY	130-140
28.56	14.0	11.31	0.52	3.7	9	8	3.15	----	1.62	"	120-130
29.03	10.8	8.70	0.38	3.5	7	6	3.17	----	1.48	"	110-120
29.52	11.5	9.23	0.42	3.7	8	6	3.20	----	1.60	"	"
30.00	12.5	9.98	0.45	3.6	8	7	3.23	----	1.41	"	120-130
30.50	15.6	12.40	0.55	3.5	10	8	3.26	----	1.81	"	"
31.08	15.4	12.18	0.59	3.8	10	8	3.30	----	1.78	"	"
31.54	23.6	18.58	1.13	4.8	24	19	3.33	----	2.87	CLAY	130-140
32.05	16.5	12.93	0.65	3.9	11	9	3.36	----	1.92	Silty CLAY to CLAY	120-130
32.55	14.3	11.15	0.47	3.3	10	7	3.39	----	1.62	"	"
33.05	13.9	10.79	0.47	3.4	9	7	3.42	----	1.57	"	"
33.54	9.4	7.27	0.39	4.1	9	7	3.45	----	1.20	CLAY	110-120
34.04	10.1	7.78	0.34	3.4	7	5	3.48	----	1.32	Silty CLAY to CLAY	"
34.53	23.2	17.79	0.67	2.9	12	9	3.51	----	2.79	Clayey SILT to Silty CLAY	120-130
35.04	24.0	18.31	0.56	2.3	10	7	3.54	----	2.90	Sandy SILT to Clayey SILT	"

DEPTH = Sampling interval (.1 feet)
Qc = Tip bearing resistance   TotStr = Total Stress using est. density**
Fs = Sleeve friction resistance   Phi = Soil friction angle*
Rf = Tip/Sleeve ratio   Su = Undrained Soil Strength* (Nk=10 for Qc<9 tsf)
SPT = Equivalent Standard Penetration Test* (Nk=12 for Qc=9 to 12 tsf) (Nk=15 for Qc>12 tsf)
References: * Robertson and Campanella, 1988
** Olsen, 1989 *** Durgunoglu & Mitchell, 1975

PROJECT: LEVEES - STEVENS CREEK
LOCATION: Mountain View CA
PROJ. NO.: 2227E(PGE-04)
Terminated at 70.0 feet

CPT NO.: CPT-3
DATE : 09-09-2008
TIME : 15:43:26
Groundwater estimated at 14.0 feet

PACIFIC GEOTECHNICAL
cpts by John Sarmiento & Associates

DEPTH (feet)	Qc (tsf)	Qc' (tsf)	Fs (tsf)	Rf (%)	SPT (N)	SPT' (N')	EffVtStr (ksf)	PHI (deg.)	SU (ksf)	SOIL BEHAVIOR TYPE	DENSITY RANGE (pcf)
0.51	134.7	215.52	4.91	3.6	54	86	0.06	----	17.96	Sandy SILT to Clayey SILT	130-140
1.05	67.6	108.16	3.27	4.8	68	108	0.13	----	9.00	Very Stiff Fine Grained *	"
1.54	58.4	93.44	2.14	3.7	29	47	0.20	----	7.77	Clayey SILT to Silty CLAY	"
2.01	104.5	167.20	2.09	2.0	35	56	0.26	41	----	Silty SAND to Sandy SILT	"
2.53	174.2	278.72	1.17	0.7	35	56	0.32	44	----	SAND	110-120
3.02	54.0	86.40	1.79	3.3	22	35	0.39	----	7.17	Sandy SILT to Clayey SILT	130-140
3.50	23.6	37.76	1.50	6.4	24	38	0.45	----	3.12	CLAY	"
4.08	21.1	33.76	1.65	7.8	21	34	0.53	----	2.78	"	"
4.58	26.4	42.24	1.91	7.2	26	42	0.60	----	3.48	"	"
5.02	30.0	48.00	1.96	6.5	30	48	0.66	----	3.96	"	"
5.53	44.3	70.88	1.95	4.4	30	47	0.73	----	5.86	Silty CLAY to CLAY	"
6.06	57.9	92.64	2.34	4.0	29	46	0.80	----	7.67	Clayey SILT to Silty CLAY	"
6.51	42.2	65.04	2.13	5.0	42	65	0.86	----	5.57	CLAY	"
7.05	33.3	48.89	1.81	5.4	33	49	0.93	----	4.38	"	"
7.59	30.6	42.77	1.68	5.5	31	43	1.00	----	4.01	"	"
8.04	26.4	36.07	1.48	5.6	26	36	1.06	----	3.45	"	"
8.58	17.2	22.85	1.04	6.0	17	23	1.14	----	2.22	"	"
9.04	20.7	26.83	0.98	4.7	21	27	1.20	----	2.68	"	"
9.58	41.8	52.63	1.76	4.2	28	35	1.27	----	5.49	Silty CLAY to CLAY	"
10.04	43.2	53.10	2.33	5.4	43	53	1.33	----	5.67	CLAY	"
10.58	47.7	56.96	2.58	5.4	48	57	1.41	----	6.27	"	"
11.02	46.4	54.07	2.62	5.6	46	54	1.47	----	6.09	"	"
11.56	33.2	37.70	1.95	5.9	33	38	1.54	----	4.32	"	"
12.05	28.0	31.13	1.61	5.8	28	31	1.61	----	3.63	"	"
12.58	25.1	27.25	1.31	5.2	25	27	1.68	----	3.23	"	"
13.03	22.3	23.73	1.22	5.5	22	24	1.74	----	2.86	"	"
13.58	17.8	18.60	0.95	5.3	18	19	1.81	----	2.25	"	"
14.05	17.6	18.27	0.94	5.3	18	18	1.84	----	2.22	"	120-130
14.50	15.3	15.78	0.77	5.0	15	16	1.87	----	1.91	"	"
15.08	23.0	23.49	1.07	4.7	23	23	1.91	----	2.93	"	130-140
15.53	16.6	16.84	0.84	5.1	17	17	1.94	----	2.08	"	120-130
16.08	18.1	18.21	0.83	4.6	18	18	1.97	----	2.27	"	"
16.54	31.3	31.30	1.61	5.1	31	31	2.01	----	4.03	"	130-140
17.07	100.4	100.31	2.76	2.7	40	40	2.05	----	13.24	Sandy SILT to Clayey SILT	"
17.52	154.8	154.55	2.02	1.3	39	39	2.08	41	----	SAND to Silty SAND	"
18.07	55.8	55.67	2.14	3.8	28	28	2.12	----	7.28	Clayey SILT to Silty CLAY	"
18.50	83.9	83.65	1.90	2.3	28	28	2.15	37	----	Silty SAND to Sandy SILT	"
19.02	78.2	77.91	1.80	2.3	26	26	2.19	37	----	"	"
19.54	76.8	76.45	1.54	2.0	26	25	2.23	36	----	"	"
20.06	80.8	80.37	1.44	1.8	27	27	2.26	37	----	"	"
20.50	83.0	82.51	2.38	2.9	33	33	2.30	----	10.88	Sandy SILT to Clayey SILT	"
21.02	177.8	176.62	2.94	1.7	44	44	2.33	41	----	SAND to Silty SAND	"
21.55	283.5	281.45	1.71	0.6	57	56	2.36	44	----	SAND	110-120
22.07	293.0	290.72	1.88	0.6	59	58	2.39	44	----	"	"
22.51	294.5	292.05	2.33	0.8	59	58	2.42	44	----	"	120-130
23.04	236.9	234.80	1.30	0.5	47	47	2.44	43	----	"	110-120
23.59	21.6	21.39	1.44	6.7	22	21	2.48	----	2.67	CLAY	130-140
24.05	13.6	13.41	0.73	5.4	14	13	2.51	----	1.60	"	120-130
24.51	18.3	17.84	0.92	5.0	18	18	2.55	----	2.22	"	130-140
25.02	22.5	21.66	0.97	4.3	15	14	2.58	----	2.78	Silty CLAY to CLAY	"
25.59	20.3	19.26	0.92	4.5	20	19	2.62	----	2.48	CLAY	"
26.08	15.9	14.93	0.70	4.4	16	15	2.66	----	1.89	"	120-130
26.56	10.9	10.13	0.49	4.5	11	10	2.69	----	1.53	"	"
27.04	11.1	10.20	0.47	4.2	11	10	2.72	----	1.55	"	"
27.52	11.5	10.45	0.61	5.3	12	10	2.75	----	1.62	"	"

PROJECT: LEVEES - STEVENS CREEK
LOCATION: Mountain View CA
PROJ. NO.: 2227E(PGE-04)
Terminated at 70.0 feet

CPT NO.: CPT-3
DATE : 09-09-2008
TIME : 15:43:26
Groundwater estimated at 14.0 feet

PACIFIC GEOTECHNICAL
cpts by John Sarmiento & Associates

DEPTH (feet)	Qc (tsf)	Qc' (tsf)	Fs (tsf)	Rf (%)	SPT (N)	SPT' (N')	EffVtStr (ksf)	PHI (deg.)	SU (ksf)	SOIL BEHAVIOR TYPE	DENSITY RANGE (pcf)
28.07	9.7	8.72	0.31	3.2	6	6	2.77	----	1.31	Silty CLAY to CLAY	110-120
28.55	11.1	9.89	0.32	2.9	7	7	2.80	----	1.54	"	"
29.02	11.4	10.07	0.36	3.2	8	7	2.82	----	1.58	"	"
29.59	41.0	35.64	1.15	2.8	16	14	2.87	----	5.21	Sandy SILT to Clayey SILT	130-140
30.06	37.5	32.18	1.18	3.1	19	16	2.90	----	4.74	Clayey SILT to Silty CLAY	"
30.54	24.8	20.99	0.99	4.0	17	14	2.93	----	3.04	Silty CLAY to CLAY	"
31.02	25.0	20.87	1.07	4.3	17	14	2.97	----	3.06	"	"
31.59	24.9	20.51	0.83	3.3	12	10	3.01	----	3.04	Clayey SILT to Silty CLAY	"
32.05	11.3	9.28	0.44	3.9	11	9	3.04	----	1.53	CLAY	110-120
32.53	16.8	13.73	0.74	4.4	17	14	3.07	----	1.96	"	120-130
33.01	15.3	12.46	0.52	3.4	10	8	3.09	----	1.75	Silty CLAY to CLAY	"
33.58	12.2	9.89	0.40	3.3	8	7	3.13	----	1.34	"	110-120
34.06	14.7	11.87	0.69	4.7	15	12	3.16	----	1.66	CLAY	120-130
34.59	13.7	11.01	0.37	2.7	7	6	3.18	----	1.53	Clayey SILT to Silty CLAY	110-120
35.06	11.8	9.45	0.35	3.0	8	6	3.21	----	1.59	Silty CLAY to CLAY	"
35.54	11.8	9.42	0.36	3.1	8	6	3.23	----	1.58	"	"
36.01	11.1	8.83	0.32	2.9	7	6	3.26	----	1.46	"	"
36.57	10.2	8.08	0.27	2.6	7	5	3.29	----	1.31	"	"
37.07	9.6	7.57	0.26	2.7	6	5	3.31	----	1.20	"	"
37.54	19.2	15.08	0.57	3.0	10	8	3.34	----	2.24	Clayey SILT to Silty CLAY	120-130
38.07	27.7	21.64	0.89	3.2	14	11	3.38	----	3.37	"	130-140
38.54	26.9	20.91	0.78	2.9	13	10	3.42	----	3.26	"	"
39.02	23.0	17.80	0.63	2.7	12	9	3.45	----	2.73	"	120-130
39.50	16.1	12.40	0.44	2.7	8	6	3.48	----	1.81	"	"
40.07	15.0	11.49	0.37	2.5	8	6	3.51	----	1.66	"	"
40.55	14.0	10.68	0.40	2.9	7	5	3.54	----	1.52	"	"
41.07	14.4	10.94	0.35	2.4	7	5	3.57	----	1.57	"	110-120
41.55	19.2	14.52	0.76	4.0	13	10	3.60	----	2.20	Silty CLAY to CLAY	120-130
42.01	45.8	34.46	2.21	4.8	31	23	3.63	----	5.75	"	130-140
42.56	128.0	95.79	1.51	1.2	32	24	3.67	38	----	SAND to Silty SAND	120-130
43.04	34.4	25.61	1.26	3.7	17	13	3.70	----	4.22	Clayey SILT to Silty CLAY	130-140
43.51	18.1	13.41	0.75	4.1	12	9	3.73	----	2.04	Silty CLAY to CLAY	120-130
44.05	20.5	15.10	1.03	5.0	21	15	3.77	----	2.36	CLAY	130-140
44.52	17.7	12.98	0.84	4.7	18	13	3.80	----	1.98	"	120-130
45.09	16.0	11.66	0.60	3.8	11	8	3.83	----	1.75	Silty CLAY to CLAY	"
45.55	24.5	17.77	0.82	3.3	12	9	3.87	----	2.88	Clayey SILT to Silty CLAY	130-140
46.03	21.6	15.59	0.71	3.3	11	8	3.90	----	2.49	"	120-130
46.59	19.0	13.64	0.57	3.0	10	7	3.93	----	2.13	"	"
47.06	19.1	13.64	0.69	3.6	13	9	3.96	----	2.14	Silty CLAY to CLAY	"
47.54	17.7	12.58	0.55	3.1	9	6	3.99	----	1.95	Clayey SILT to Silty CLAY	"
48.01	18.0	12.75	0.56	3.1	9	6	4.02	----	1.99	"	"
48.58	20.6	14.52	0.62	3.0	10	7	4.06	----	2.33	"	"
49.05	15.7	11.03	0.52	3.3	10	7	4.09	----	1.67	Silty CLAY to CLAY	"
49.52	15.8	11.06	0.50	3.2	8	6	4.12	----	1.68	Clayey SILT to Silty CLAY	"
50.08	26.4	18.39	0.96	3.6	13	9	4.16	----	3.09	"	130-140
50.55	32.9	22.82	1.44	4.4	22	15	4.19	----	3.95	Silty CLAY to CLAY	"
51.07	41.5	28.66	1.63	3.9	21	14	4.23	----	5.10	Clayey SILT to Silty CLAY	"
51.54	39.1	26.89	1.82	4.7	26	18	4.26	----	4.77	Silty CLAY to CLAY	"
52.00	30.9	21.16	1.26	4.1	21	14	4.30	----	3.67	"	"
52.56	21.2	14.45	0.80	3.8	14	10	4.33	----	2.38	"	120-130
53.02	18.2	12.36	0.61	3.4	9	6	4.36	----	1.97	Clayey SILT to Silty CLAY	"
53.58	14.7	9.94	0.38	2.6	7	5	4.40	----	1.50	"	"
54.05	24.5	16.50	0.77	3.1	12	8	4.43	----	2.80	"	130-140
54.52	17.6	11.81	0.51	2.9	9	6	4.46	----	1.88	"	120-130
55.06	71.6	47.80	2.36	3.3	29	19	4.50	----	9.07	Sandy SILT to Clayey SILT	130-140

PROJECT: LEVEES - STEVENS CREEK
LOCATION: Mountain View CA
PROJ. NO.: 2227E(PGE-04)
Terminated at 70.0 feet

CPT NO.: CPT-3
DATE : 09-09-2008
TIME : 15:43:26
Groundwater estimated at 14.0 feet

PACIFIC GEOTECHNICAL
cpts by John Sarmiento & Associates

DEPTH (feet)	Qc (tsf)	Qc' (tsf)	Fs (tsf)	Rf (%)	SPT (N)	SPT' (N')	EffVtStr (ksf)	PHI (deg.)	SU (ksf)	SOIL BEHAVIOR TYPE	DENSITY RANGE (pcf)
55.51	155.2	103.18	3.11	2.0	52	34	4.53	38	----	Silty SAND to Sandy SILT	130-140
56.06	236.7	156.68	2.22	0.9	47	31	4.57	41	----	SAND	120-130
56.58	257.2	169.65	1.65	0.6	51	34	4.59	41	----	"	110-120
57.02	34.0	22.33	2.41	7.1	34	22	4.62	----	4.04	CLAY	130-140
57.55	21.0	13.73	1.03	4.9	21	14	4.66	----	2.31	"	"
58.08	15.9	10.35	0.81	5.1	16	10	4.70	----	1.62	"	120-130
58.53	19.4	12.58	0.85	4.4	19	13	4.73	----	2.08	"	"
59.09	24.8	15.99	1.10	4.4	17	11	4.77	----	2.80	Silty CLAY to CLAY	130-140
59.56	13.7	8.80	0.54	3.9	14	9	4.80	----	1.32	CLAY	120-130
60.02	17.1	10.94	0.59	3.5	11	7	4.82	----	1.77	Silty CLAY to CLAY	"
60.52	21.9	13.95	0.82	3.7	15	9	4.86	----	2.40	"	130-140
61.05	18.3	11.60	0.73	4.0	12	8	4.89	----	1.92	"	120-130
61.51	18.6	11.75	0.72	3.9	12	8	4.92	----	1.95	"	"
62.06	17.8	11.19	0.65	3.7	12	7	4.96	----	1.84	"	"
62.53	18.7	11.71	0.73	3.9	12	8	4.99	----	1.96	"	"
63.09	18.4	11.48	0.78	4.2	12	8	5.02	----	1.91	"	"
63.56	18.0	11.19	0.66	3.7	12	7	5.05	----	1.86	"	"
64.02	15.2	9.42	0.47	3.1	8	5	5.08	----	1.48	Clayey SILT to Silty CLAY	"
64.58	14.6	9.02	0.43	2.9	7	5	5.11	----	1.39	"	"
65.04	18.1	11.14	0.64	3.5	12	7	5.14	----	1.86	Silty CLAY to CLAY	"
65.50	17.1	10.50	0.70	4.1	11	7	5.17	----	1.72	"	"
66.06	18.8	11.50	0.80	4.3	13	8	5.21	----	1.94	"	"
66.51	20.5	12.49	0.96	4.7	21	12	5.24	----	2.16	CLAY	130-140
67.04	18.8	11.42	0.81	4.3	19	11	5.27	----	1.93	"	120-130
67.50	17.9	10.84	0.73	4.1	12	7	5.30	----	1.81	Silty CLAY to CLAY	"
68.05	19.6	11.82	0.86	4.4	20	12	5.34	----	2.03	CLAY	"
68.53	17.4	10.46	0.79	4.5	17	10	5.37	----	1.73	"	"
69.06	16.4	9.82	0.66	4.0	11	7	5.40	----	1.60	Silty CLAY to CLAY	"
69.56	16.4	9.82	0.66	4.0	11	7	5.40	----	1.60	"	"
70.08	18.8	11.18	0.57	3.0	9	6	5.46	----	1.91	Clayey SILT to Silty CLAY	"

DEPTH = Sampling interval (.1 feet)
Qc = Tip bearing resistance TotStr = Total Stress using est. density**
Fs = Sleeve friction resistance Phi = Soil friction angle*
Rf = Tip/Sleeve ratio Su = Undrained Soil Strength* (Nk=10 for Qc<9 tsf)
SPT = Equivalent Standard Penetration Test* (Nk=12 for Qc=9 to 12 tsf) (Nk=15 for Qc>12 tsf)
References: * Robertson and Campanella, 1988
** Olsen, 1989 *** Durgunoglu & Mitchell, 1975

PROJECT: LEVEES - STEVENS CREEK
LOCATION: Mountain View CA
PROJ. NO.: 2227E(PGE-04)
Terminated at 70.0 feet

CPT NO.: CPT-4
DATE : 09-09-2008
TIME : 16:32:27
Groundwater measured at 10.6 feet

PACIFIC GEOTECHNICAL
cpts by John Sarmiento & Associates

DEPTH (feet)	Qc (tsf)	Qc' (tsf)	Fs (tsf)	Rf (%)	SPT (N)	SPT' (N')	EffVtStr (ksf)	PHI (deg.)	SU (ksf)	SOIL BEHAVIOR TYPE	DENSITY RANGE (pcf)
0.52	70.5	112.80	3.37	4.8	71	113	0.06	----	9.40	Very Stiff Fine Grained *	130-140
1.01	59.2	94.72	2.51	4.2	30	47	0.13	----	7.88	Clayey SILT to Silty CLAY	"
1.52	20.2	32.32	1.82	9.0	20	32	0.20	----	2.68	CLAY	"
2.05	16.2	25.92	1.50	9.3	16	26	0.27	----	2.14	"	"
2.55	17.3	27.68	1.23	7.1	17	28	0.33	----	2.28	"	"
3.04	19.9	31.84	1.13	5.7	20	32	0.40	----	2.63	"	"
3.53	21.6	34.56	1.01	4.7	22	35	0.47	----	2.85	"	"
4.02	22.5	36.00	0.96	4.3	15	24	0.53	----	2.96	Silty CLAY to CLAY	"
4.51	19.2	30.72	0.94	4.9	19	31	0.60	----	2.52	CLAY	"
5.01	16.3	26.08	0.91	5.6	16	26	0.66	----	2.13	"	120-130
5.50	15.0	24.00	0.85	5.7	15	24	0.72	----	1.95	"	"
6.06	16.0	25.60	0.77	4.8	16	26	0.79	----	2.08	"	"
6.57	18.9	29.17	0.85	4.5	19	29	0.86	----	2.46	"	"
7.07	18.6	27.55	0.77	4.1	12	18	0.92	----	2.42	Silty CLAY to CLAY	"
7.58	11.5	16.30	0.61	5.3	12	16	0.98	----	1.83	CLAY	"
8.03	9.0	12.44	0.44	4.9	9	12	1.03	----	1.41	"	110-120
8.58	7.6	10.26	0.40	5.3	8	10	1.10	----	1.41	"	"
9.04	9.2	12.16	0.45	4.9	9	12	1.15	----	1.44	"	"
9.59	8.8	11.34	0.43	4.9	9	11	1.21	----	1.64	"	"
10.04	8.6	10.86	0.40	4.7	9	11	1.27	----	1.59	"	"
10.50	7.5	9.28	0.33	4.4	8	9	1.32	----	1.37	"	"
11.06	8.1	9.91	0.39	4.8	8	10	1.35	----	1.48	"	"
11.51	8.7	10.54	0.48	5.5	9	11	1.37	----	1.60	"	"
12.07	11.1	13.26	0.58	5.2	11	13	1.41	----	1.72	"	120-130
12.54	10.0	11.81	0.56	5.6	10	12	1.44	----	1.54	"	"
13.09	15.8	18.39	0.54	3.4	11	12	1.47	----	2.00	Silty CLAY to CLAY	"
13.53	10.8	12.45	0.43	4.0	11	12	1.49	----	1.66	CLAY	110-120
14.08	9.7	11.08	0.38	3.9	10	11	1.52	----	1.47	"	"
14.53	12.1	13.69	0.44	3.6	8	9	1.55	----	1.49	Silty CLAY to CLAY	120-130
15.08	12.6	14.10	0.48	3.8	13	14	1.59	----	1.56	CLAY	"
15.51	11.5	12.78	0.34	3.0	8	9	1.61	----	1.76	Silty CLAY to CLAY	110-120
16.06	14.1	15.49	0.51	3.6	9	10	1.64	----	1.75	"	120-130
16.50	12.1	13.17	0.58	4.8	12	13	1.67	----	1.48	CLAY	"
17.04	7.9	8.52	0.38	4.8	8	9	1.70	----	1.37	"	110-120
17.50	8.4	8.99	0.37	4.4	8	9	1.72	----	1.46	"	"
18.05	6.2	6.58	0.21	3.4	6	7	1.75	----	1.02	"	100-110
18.50	5.1	5.39	0.20	3.9	5	5	1.77	----	0.79	"	"
19.05	5.7	5.99	0.23	4.0	6	6	1.79	----	0.91	"	"
19.50	11.3	11.81	0.39	3.5	8	8	1.81	----	1.69	Silty CLAY to CLAY	110-120
20.03	28.1	29.11	0.92	3.3	14	15	1.85	----	3.58	Clayey SILT to Silty CLAY	130-140
20.58	37.2	38.18	1.33	3.6	19	19	1.89	----	4.79	"	"
21.03	20.7	21.08	1.17	5.7	21	21	1.92	----	2.59	CLAY	"
21.51	21.3	21.51	0.96	4.5	21	22	1.96	----	2.66	"	"
22.04	15.5	15.53	0.58	3.7	10	10	1.99	----	1.89	Silty CLAY to CLAY	120-130
22.58	36.8	36.78	1.04	2.8	15	15	2.03	----	4.72	Sandy SILT to Clayey SILT	130-140
23.04	22.4	22.37	0.70	3.1	11	11	2.06	----	2.80	Clayey SILT to Silty CLAY	120-130
23.57	17.4	17.37	0.51	2.9	9	9	2.09	----	2.13	"	"
24.03	14.1	14.07	0.36	2.6	7	7	2.12	----	1.68	"	110-120
24.57	8.2	8.18	0.29	3.5	8	8	2.14	----	1.34	CLAY	"
25.01	8.4	8.37	0.27	3.2	8	8	2.16	----	1.37	"	100-110
25.56	9.2	9.16	0.35	3.8	9	9	2.19	----	1.27	"	110-120
26.02	8.7	8.66	0.43	4.9	9	9	2.22	----	1.42	"	"
26.55	9.1	9.06	0.36	4.0	9	9	2.24	----	1.25	"	"
27.00	11.1	11.04	0.53	4.8	11	11	2.27	----	1.57	"	120-130
27.54	12.5	12.42	0.52	4.2	13	12	2.31	----	1.44	"	"

PROJECT: LEVEES - STEVENS CREEK
LOCATION: Mountain View CA
PROJ. NO.: 2227E(PGE-04)
Terminated at 70.0 feet

CPT NO.: CPT-4
DATE : 09-09-2008
TIME : 16:32:27
Groundwater measured at 10.6 feet

PACIFIC GEOTECHNICAL
cpts by John Sarmiento & Associates

DEPTH (feet)	Qc (tsf)	Qc' (tsf)	Fs (tsf)	Rf (%)	SPT (N)	SPT' (N')	EffVtStr (ksf)	PHI (deg.)	SU (ksf)	SOIL BEHAVIOR TYPE	DENSITY RANGE (pcf)
28.02	17.1	16.98	0.51	3.0	9	8	2.34	----	2.05	Clayey SILT to Silty CLAY	120-130
28.56	9.0	8.93	0.34	3.8	9	9	2.37	----	1.21	CLAY	110-120
29.01	9.3	9.23	0.41	4.4	9	9	2.39	----	1.25	"	"
29.54	8.2	8.13	0.40	4.9	8	8	2.42	----	1.28	"	"
30.08	8.0	7.93	0.38	4.8	8	8	2.45	----	1.23	"	"
30.53	8.5	8.42	0.34	4.0	9	8	2.47	----	1.33	"	"
31.08	10.2	10.10	0.34	3.3	7	7	2.50	----	1.38	Silty CLAY to CLAY	"
31.53	9.2	9.06	0.24	2.6	6	6	2.52	----	1.21	"	100-110
32.07	10.4	10.14	0.28	2.7	7	7	2.55	----	1.41	"	110-120
32.52	13.2	12.77	0.33	2.5	7	6	2.57	----	1.50	Clayey SILT to Silty CLAY	"
33.06	11.1	10.63	0.36	3.2	7	7	2.60	----	1.52	Silty CLAY to CLAY	"
33.51	7.3	6.95	0.24	3.3	7	7	2.62	----	1.05	CLAY	100-110
34.05	8.4	7.91	0.35	4.2	8	8	2.65	----	1.27	"	110-120
34.52	29.0	27.00	1.33	4.6	19	18	2.68	----	3.59	Silty CLAY to CLAY	130-140
35.05	77.0	70.70	1.58	2.1	26	24	2.72	36	----	Silty SAND to Sandy SILT	"
35.58	86.8	78.60	2.39	2.8	35	31	2.76	----	11.29	Sandy SILT to Clayey SILT	"
36.02	80.9	72.40	1.87	2.3	27	24	2.79	36	----	Silty SAND to Sandy SILT	"
36.54	57.4	50.65	2.30	4.0	29	25	2.83	----	7.36	Clayey SILT to Silty CLAY	"
37.06	100.2	87.35	1.17	1.2	25	22	2.86	37	----	SAND to Silty SAND	120-130
37.55	15.6	13.44	0.74	4.7	16	13	2.89	----	1.77	CLAY	"
38.07	21.5	18.25	0.88	4.1	14	12	2.93	----	2.56	Silty CLAY to CLAY	130-140
38.51	14.7	12.35	0.81	5.5	15	12	2.95	----	1.65	CLAY	120-130
39.04	18.9	15.67	0.86	4.6	19	16	2.99	----	2.20	"	"
39.57	19.5	16.03	0.96	4.9	20	16	3.03	----	2.28	"	130-140
40.02	23.6	19.31	1.07	4.5	24	19	3.06	----	2.82	"	"
40.55	18.4	14.97	1.34	7.3	18	15	3.10	----	2.12	"	"
41.09	14.2	11.50	0.84	5.9	14	12	3.13	----	1.56	"	120-130
41.54	15.1	12.17	1.25	8.3	15	12	3.16	----	1.67	"	130-140
42.07	51.9	41.61	1.09	2.1	21	17	3.20	----	6.58	Sandy SILT to Clayey SILT	"
42.50	14.3	11.42	0.59	4.1	14	11	3.23	----	1.56	CLAY	120-130
43.04	18.5	14.70	0.79	4.3	19	15	3.26	----	2.11	"	"
43.56	17.4	13.76	0.76	4.4	17	14	3.30	----	1.96	"	"
44.05	18.6	14.65	0.73	3.9	12	10	3.33	----	2.12	Silty CLAY to CLAY	"
44.57	20.4	15.98	0.91	4.5	20	16	3.36	----	2.35	CLAY	130-140
45.02	19.3	15.04	0.93	4.8	19	15	3.40	----	2.20	"	"
45.54	22.5	17.44	1.16	5.2	23	17	3.43	----	2.63	"	"
46.07	26.9	20.73	1.23	4.6	18	14	3.47	----	3.21	Silty CLAY to CLAY	"
46.51	28.6	21.93	1.32	4.6	19	15	3.50	----	3.43	"	"
47.03	31.6	24.10	1.37	4.3	21	16	3.54	----	3.83	"	"
47.53	31.6	23.97	1.39	4.4	21	16	3.58	----	3.82	"	"
48.06	29.6	22.32	1.28	4.3	20	15	3.62	----	3.55	"	"
48.50	23.8	17.86	1.04	4.4	16	12	3.65	----	2.77	"	"
49.02	37.9	28.27	1.37	3.6	19	14	3.69	----	4.65	Clayey SILT to Silty CLAY	"
49.53	18.9	14.03	0.69	3.7	13	9	3.72	----	2.11	Silty CLAY to CLAY	120-130
50.06	21.7	16.03	0.74	3.4	11	8	3.75	----	2.48	Clayey SILT to Silty CLAY	"
50.56	26.2	19.24	1.42	5.4	26	19	3.79	----	3.07	CLAY	130-140
51.08	50.2	36.64	1.92	3.8	25	18	3.83	----	6.27	Clayey SILT to Silty CLAY	"
51.51	83.5	60.66	1.84	2.2	28	20	3.86	35	----	Silty SAND to Sandy SILT	"
52.02	46.5	33.58	2.93	6.3	47	34	3.89	----	5.77	CLAY	"
52.52	218.5	156.88	4.93	2.3	73	52	3.93	41	----	Silty SAND to Sandy SILT	"
53.07	264.6	189.10	2.02	0.8	53	38	3.96	42	----	SAND	110-120
53.56	185.5	131.81	4.53	2.4	62	44	4.00	40	----	Silty SAND to Sandy SILT	130-140
54.06	265.6	188.09	1.53	0.6	53	38	4.02	42	----	SAND	110-120
54.53	179.0	126.31	2.04	1.1	36	25	4.05	39	----	"	120-130
55.07	279.7	196.57	2.31	0.8	56	39	4.08	42	----	"	"

PROJECT: LEVEES - STEVENS CREEK
LOCATION: Mountain View CA
PROJ. NO.: 2227E(PGE-04)
Terminated at 70.0 feet

CPT NO.: CPT-4
DATE : 09-09-2008
TIME : 16:32:27
Groundwater measured at 10.6 feet

PACIFIC GEOTECHNICAL
cpts by John Sarmiento & Associates

DEPTH (feet)	Qc (tsf)	Qc' (tsf)	Fs (tsf)	Rf (%)	SPT (N)	SPT' (N')	EffVtStr (ksf)	PHI (deg.)	SU (ksf)	SOIL BEHAVIOR TYPE	DENSITY RANGE (pcf)
55.54	180.0	126.05	2.08	1.2	36	25	4.11	39	----	SAND	120-130
56.02	36.0	25.10	1.30	3.6	18	13	4.15	----	4.33	Clayey SILT to Silty CLAY	130-140
56.52	21.8	15.14	0.78	3.6	15	10	4.18	----	2.44	Silty CLAY to CLAY	120-130
57.02	22.3	15.42	0.81	3.6	15	10	4.22	----	2.50	"	130-140
57.52	30.5	21.00	1.20	3.9	20	14	4.25	----	3.59	"	"
58.02	37.2	25.50	1.54	4.1	25	17	4.29	----	4.48	"	"
58.54	31.9	21.76	0.80	2.5	13	9	4.33	----	3.76	Sandy SILT to Clayey SILT	"
59.05	14.6	9.92	0.36	2.5	7	5	4.36	----	1.45	Clayey SILT to Silty CLAY	120-130
59.57	17.1	11.57	0.55	3.2	9	6	4.39	----	1.78	"	"
60.08	17.7	11.93	0.91	5.1	18	12	4.42	----	1.86	CLAY	"
60.56	14.8	9.94	0.72	4.9	15	10	4.45	----	1.47	"	"
61.08	15.1	10.10	0.63	4.2	15	10	4.49	----	1.50	"	"
61.51	17.7	11.80	0.86	4.9	18	12	4.51	----	1.85	"	"
62.02	16.1	10.69	0.84	5.2	16	11	4.55	----	1.63	"	"
62.53	17.4	11.50	0.83	4.8	17	12	4.58	----	1.80	"	"
63.04	19.4	12.76	1.04	5.4	19	13	4.61	----	2.06	"	130-140
63.54	14.6	9.57	0.66	4.5	15	10	4.65	----	1.42	"	120-130
64.05	14.5	9.46	0.58	4.0	15	9	4.68	----	1.40	"	"
64.56	25.2	16.36	1.18	4.7	25	16	4.71	----	2.82	"	130-140
65.06	20.7	13.38	1.19	5.7	21	13	4.75	----	2.22	"	"
65.57	16.8	10.81	0.89	5.3	17	11	4.78	----	1.69	"	120-130
66.08	18.7	11.97	0.94	5.0	19	12	4.82	----	1.94	"	130-140
66.51	21.3	13.58	1.04	4.9	21	14	4.85	----	2.28	"	"
67.01	27.0	17.13	1.29	4.8	27	17	4.89	----	3.04	"	"
67.51	25.0	15.79	1.17	4.7	25	16	4.92	----	2.77	"	"
68.02	21.5	13.51	1.13	5.3	22	14	4.96	----	2.30	"	"
68.56	15.2	9.51	0.67	4.4	15	10	4.99	----	1.45	"	120-130
69.05	20.9	13.03	0.79	3.8	14	9	5.02	----	2.21	Silty CLAY to CLAY	"
69.55	23.6	14.66	1.31	5.6	24	15	5.06	----	2.56	CLAY	130-140
70.06	20.2	12.50	1.14	5.6	20	12	5.10	----	2.11	"	"

DEPTH = Sampling interval (.1 feet)
Qc = Tip bearing resistance TotStr = Total Stress using est. density**
Fs = Sleeve friction resistance Phi = Soil friction angle*
Rf = Tip/Sleeve ratio Su = Undrained Soil Strength* (Nk=10 for Qc<9 tsf)
SPT = Equivalent Standard Penetration Test* (Nk=12 for Qc=9 to 12 tsf) (Nk=15 for Qc>12 tsf)
References: * Robertson and Campanella, 1988
** Olsen, 1989 *** Durgunoglu & Mitchell, 1975

PROJECT: LEVEES - STEVENS CREEK
LOCATION: Mountain View CA
PROJ. NO.: 2227E(PGE-04)
Terminated at 70.0 feet

CPT NO.: CPT-5
DATE : 09-10-2008
TIME : 13:02:30
Groundwater estimated at 11.7 feet

PACIFIC GEOTECHNICAL
cpts by John Sarmiento & Associates

DEPTH (feet)	Qc (tsf)	Qc' (tsf)	Fs (tsf)	Rf (%)	SPT (N)	SPT' (N')	EffVtStr (ksf)	PHI (deg.)	SU (ksf)	SOIL BEHAVIOR TYPE	DENSITY RANGE (pcf)
0.56	137.3	219.68	4.85	3.5	55	88	0.07	----	18.30	Sandy SILT to Clayey SILT	130-140
1.02	133.2	213.12	5.25	3.9	133	213	0.13	----	17.75	Very Stiff Fine Grained *	>140
1.54	242.9	388.64	6.28	2.6	81	130	0.20	46	----	Silty SAND to Sandy SILT	130-140
2.03	338.8	542.08	3.05	0.9	68	108	0.26	48	----	SAND	120-130
2.55	73.9	118.24	3.57	4.8	74	118	0.33	----	9.83	Very Stiff Fine Grained *	130-140
3.06	14.0	22.40	1.11	7.9	14	22	0.40	----	1.84	CLAY	120-130
3.56	12.3	19.68	0.98	8.0	12	20	0.46	----	1.61	"	"
4.07	18.3	29.28	1.12	6.1	18	29	0.53	----	2.40	"	130-140
4.51	20.6	32.96	1.31	6.4	21	33	0.59	----	2.71	"	"
5.04	22.7	36.32	1.42	6.3	23	36	0.66	----	2.98	"	"
5.55	19.7	31.52	1.19	6.0	20	32	0.73	----	2.58	"	"
6.07	18.1	28.96	1.15	6.4	18	29	0.80	----	2.36	"	"
6.51	18.5	28.56	1.06	5.7	19	29	0.86	----	2.41	"	"
7.04	19.6	28.85	1.06	5.4	20	29	0.93	----	2.55	"	"
7.57	16.9	23.66	1.00	5.9	17	24	1.00	----	2.19	"	"
8.02	16.9	23.17	0.92	5.4	17	23	1.06	----	2.18	"	120-130
8.56	19.2	25.60	0.99	5.2	19	26	1.13	----	2.48	"	130-140
9.05	15.0	19.52	0.82	5.5	15	20	1.19	----	1.92	"	120-130
9.58	7.0	8.89	0.44	6.3	7	9	1.25	----	1.27	"	110-120
10.03	5.1	6.36	0.35	6.9	5	6	1.30	----	0.89	"	100-110
10.57	9.1	11.05	0.55	6.0	9	11	1.37	----	1.40	"	120-130
11.02	10.3	12.23	0.77	7.5	10	12	1.42	----	1.60	"	"
11.56	12.8	14.79	0.61	4.8	13	15	1.49	----	1.61	"	"
12.04	13.3	15.20	0.78	5.9	13	15	1.52	----	1.67	"	"
12.50	11.6	13.14	0.72	6.2	12	13	1.55	----	1.80	"	"
13.04	10.3	11.54	0.60	5.8	10	12	1.58	----	1.58	"	"
13.59	13.3	14.74	0.78	5.9	13	15	1.62	----	1.66	"	"
14.04	13.3	14.60	0.74	5.6	13	15	1.64	----	1.65	"	"
14.50	11.3	12.29	0.57	5.0	11	12	1.67	----	1.73	"	"
15.05	7.3	7.86	0.43	5.9	7	8	1.70	----	1.27	"	110-120
15.56	6.5	6.94	0.35	5.4	7	7	1.73	----	1.10	"	"
16.03	7.0	7.41	0.34	4.9	7	7	1.75	----	1.20	"	"
16.50	5.8	6.12	0.37	6.4	6	6	1.77	----	0.95	"	100-110
17.06	7.3	7.65	0.35	4.8	7	8	1.80	----	1.25	"	110-120
17.53	5.3	5.53	0.27	5.1	5	6	1.82	----	0.84	"	100-110
18.00	5.8	6.02	0.31	5.3	6	6	1.84	----	0.94	"	"
18.56	8.3	8.55	0.34	4.1	8	9	1.87	----	1.43	"	110-120
19.04	6.1	6.26	0.27	4.4	6	6	1.89	----	0.98	"	100-110
19.52	17.3	17.62	0.75	4.3	17	18	1.92	----	2.15	"	120-130
20.07	30.3	30.57	2.00	6.6	30	31	1.96	----	3.87	"	130-140
20.54	52.2	52.23	1.55	3.0	21	21	2.00	----	6.79	Sandy SILT to Clayey SILT	"
21.00	19.3	19.29	0.77	4.0	13	13	2.03	----	2.40	Silty CLAY to CLAY	120-130
21.57	16.0	15.98	0.85	5.3	16	16	2.06	----	1.95	CLAY	"
22.04	38.7	38.63	2.04	5.3	39	39	2.10	----	4.98	"	130-140
22.59	33.9	33.81	2.21	6.5	34	34	2.14	----	4.33	"	"
23.05	16.1	16.05	0.92	5.7	16	16	2.16	----	1.95	"	120-130
23.52	14.3	14.24	0.64	4.5	14	14	2.19	----	1.71	"	"
24.07	8.0	7.96	0.47	5.9	8	8	2.22	----	1.30	"	110-120
24.53	5.3	5.27	0.31	5.8	5	5	2.24	----	0.75	"	100-110
25.06	8.9	8.85	0.57	6.4	9	9	2.28	----	1.47	"	120-130
25.53	13.9	13.82	0.77	5.5	14	14	2.31	----	1.64	"	"
26.00	17.3	17.18	1.01	5.8	17	17	2.34	----	2.09	"	130-140
26.56	11.5	11.41	0.74	6.4	12	11	2.37	----	1.64	"	120-130
27.03	13.3	13.19	0.73	5.5	13	13	2.40	----	1.55	"	"
27.51	16.1	15.96	0.72	4.5	16	16	2.43	----	1.92	"	"

PROJECT: LEVEES - STEVENS CREEK
LOCATION: Mountain View CA
PROJ. NO.: 2227E(PGE-04)
Terminated at 70.0 feet

CPT NO.: CPT-5
DATE : 09-10-2008
TIME : 13:02:30
Groundwater estimated at 11.7 feet

PACIFIC GEOTECHNICAL
cpts by John Sarmiento & Associates

DEPTH (feet)	Qc (tsf)	Qc' (tsf)	Fs (tsf)	Rf (%)	SPT (N)	SPT' (N')	EffVtStr (ksf)	PHI (deg.)	SU (ksf)	SOIL BEHAVIOR TYPE	DENSITY RANGE (pcf)
28.09	10.7	10.60	0.51	4.8	11	11	2.47	----	1.49	CLAY	120-130
28.55	8.7	8.61	0.41	4.7	9	9	2.49	----	1.38	"	110-120
29.02	9.9	9.74	0.45	4.5	10	10	2.52	----	1.35	"	"
29.56	11.7	11.38	0.54	4.6	12	11	2.55	----	1.64	"	120-130
30.03	10.8	10.40	0.52	4.8	11	10	2.58	----	1.49	"	"
30.50	10.6	10.10	0.68	6.4	11	10	2.61	----	1.45	"	"
31.06	39.4	37.03	1.42	3.6	20	19	2.65	----	5.00	Clayey SILT to Silty CLAY	130-140
31.50	102.1	95.02	1.10	1.1	26	24	2.68	38	----	SAND to Silty SAND	120-130
32.07	111.8	102.54	2.33	2.1	37	34	2.72	38	----	Silty SAND to Sandy SILT	130-140
32.51	167.9	152.19	2.07	1.2	34	30	2.75	40	----	SAND	"
33.05	215.0	193.27	0.80	0.4	43	39	2.78	42	----	"	100-110
33.50	56.3	50.00	1.49	2.6	23	20	2.81	----	7.23	Sandy SILT to Clayey SILT	130-140
34.04	8.9	7.80	0.60	6.7	9	8	2.84	----	1.36	CLAY	120-130
34.55	10.8	9.38	0.43	4.0	11	9	2.87	----	1.44	"	110-120
35.01	11.0	9.46	0.42	3.8	11	9	2.89	----	1.47	"	"
35.56	16.9	14.34	0.66	3.9	11	10	2.93	----	1.96	Silty CLAY to CLAY	120-130
36.02	17.3	14.52	0.62	3.6	12	10	2.96	----	2.01	"	"
36.59	21.4	17.66	0.93	4.3	14	12	3.00	----	2.55	"	130-140
37.05	21.9	18.00	0.66	3.0	11	9	3.03	----	2.61	Clayey SILT to Silty CLAY	120-130
37.52	12.3	10.07	0.39	3.2	8	7	3.05	----	1.33	Silty CLAY to CLAY	110-120
38.07	16.3	13.29	0.57	3.5	11	9	3.09	----	1.86	"	120-130
38.54	19.2	15.58	0.84	4.4	19	16	3.12	----	2.24	CLAY	"
39.00	20.1	16.24	0.87	4.3	20	16	3.15	----	2.36	"	130-140
39.55	16.5	13.26	0.77	4.7	17	13	3.18	----	1.87	"	120-130
40.02	26.4	21.12	1.01	3.8	18	14	3.22	----	3.19	Silty CLAY to CLAY	130-140
40.58	14.4	11.46	0.59	4.1	14	11	3.25	----	1.58	CLAY	120-130
41.03	10.5	8.33	0.37	3.5	7	6	3.28	----	1.32	Silty CLAY to CLAY	110-120
41.58	10.9	8.61	0.39	3.6	7	6	3.31	----	1.39	"	"
42.05	11.7	9.21	0.36	3.1	8	6	3.33	----	1.51	"	"
42.50	13.6	10.67	0.33	2.4	7	5	3.35	----	1.46	Clayey SILT to Silty CLAY	"
43.06	11.3	8.82	0.30	2.7	6	4	3.38	----	1.44	"	"
43.52	12.5	9.73	0.40	3.2	8	6	3.41	----	1.31	Silty CLAY to CLAY	"
44.05	10.9	8.44	0.50	4.6	11	8	3.44	----	1.36	CLAY	120-130
44.53	18.3	14.11	0.78	4.3	18	14	3.47	----	2.07	"	"
45.08	23.5	18.01	1.19	5.1	24	18	3.51	----	2.76	"	130-140
45.54	22.6	17.23	1.19	5.3	23	17	3.54	----	2.64	"	"
46.09	17.2	13.05	0.77	4.5	17	13	3.58	----	1.91	"	120-130
46.55	16.3	12.31	0.64	3.9	11	8	3.61	----	1.79	Silty CLAY to CLAY	"
47.01	16.7	12.56	0.64	3.8	11	8	3.64	----	1.84	"	"
47.57	16.4	12.26	0.47	2.9	8	6	3.67	----	1.79	Clayey SILT to Silty CLAY	"
48.04	16.6	12.36	0.56	3.4	11	8	3.70	----	1.81	Silty CLAY to CLAY	"
48.50	21.9	16.22	0.87	4.0	15	11	3.73	----	2.52	"	130-140
49.05	17.3	12.74	0.69	4.0	12	8	3.77	----	1.90	"	120-130
49.51	42.8	31.37	1.61	3.8	21	16	3.80	----	5.30	Clayey SILT to Silty CLAY	130-140
50.05	29.7	21.63	1.53	5.2	30	22	3.84	----	3.54	CLAY	"
50.50	22.8	16.52	1.28	5.6	23	17	3.87	----	2.62	"	"
51.04	22.2	15.98	1.16	5.2	22	16	3.91	----	2.53	"	"
51.59	16.6	11.89	0.73	4.4	17	12	3.95	----	1.78	"	120-130
52.04	20.2	14.39	1.00	5.0	20	14	3.98	----	2.26	"	130-140
52.58	26.6	18.84	1.28	4.8	27	19	4.02	----	3.11	"	"
53.03	29.4	20.74	1.62	5.5	29	21	4.05	----	3.48	"	"
53.57	27.4	19.24	1.50	5.5	27	19	4.09	----	3.21	"	"
54.07	27.9	19.51	1.33	4.8	28	20	4.13	----	3.27	"	"
54.52	32.3	22.49	1.29	4.0	22	15	4.16	----	3.85	Silty CLAY to CLAY	"
55.06	28.7	19.89	1.38	4.8	29	20	4.20	----	3.37	CLAY	"

PROJECT: LEVEES - STEVENS CREEK
LOCATION: Mountain View CA
PROJ. NO.: 2227E(PGE-04)
Terminated at 70.0 feet

CPT NO.: CPT-5
DATE : 09-10-2008
TIME : 13:02:30
Groundwater estimated at 11.7 feet

PACIFIC GEOTECHNICAL
cpts by John Sarmiento & Associates

DEPTH (feet)	Qc (tsf)	Qc' (tsf)	Fs (tsf)	Rf (%)	SPT (N)	SPT' (N')	EffVtStr (ksf)	PHI (deg.)	SU (ksf)	SOIL BEHAVIOR TYPE	DENSITY RANGE (pcf)
55.51	22.3	15.39	1.13	5.1	22	15	4.23	----	2.51	CLAY	130-140
56.05	20.4	14.01	1.01	5.0	20	14	4.27	----	2.25	"	"
56.58	19.8	13.54	1.05	5.3	20	14	4.31	----	2.17	"	"
57.07	36.1	24.57	1.78	4.9	36	25	4.35	----	4.33	"	"
57.52	36.0	24.40	1.81	5.0	36	24	4.38	----	4.32	"	"
58.05	28.4	19.16	1.67	5.9	28	19	4.42	----	3.30	"	"
58.58	26.7	17.93	1.56	5.8	27	18	4.45	----	3.07	"	"
59.01	21.9	14.64	1.43	6.5	22	15	4.49	----	2.42	"	"
59.54	22.3	14.84	1.35	6.1	22	15	4.52	----	2.47	"	"
60.07	25.2	16.69	1.56	6.2	25	17	4.56	----	2.85	"	"
60.54	29.4	19.38	1.79	6.1	29	19	4.60	----	3.41	"	"
61.07	20.3	13.32	1.31	6.5	20	13	4.64	----	2.19	"	"
61.51	13.3	8.69	0.65	4.9	13	9	4.66	----	1.25	"	120-130
62.04	15.3	9.96	0.76	5.0	15	10	4.70	----	1.52	"	"
62.56	14.4	9.33	0.79	5.5	14	9	4.73	----	1.39	"	"
63.07	20.6	13.29	1.19	5.8	21	13	4.77	----	2.21	"	130-140
63.57	28.0	17.97	1.52	5.4	28	18	4.80	----	3.20	"	"
64.09	24.1	15.39	1.49	6.2	24	15	4.84	----	2.67	"	"
64.53	24.5	15.58	1.23	5.0	25	16	4.87	----	2.72	"	"
65.04	32.8	20.75	1.29	3.9	16	10	4.91	----	3.82	Clayey SILT to Silty CLAY	"
65.57	33.9	21.34	1.66	4.9	34	21	4.95	----	3.97	CLAY	"
66.09	28.2	17.66	1.41	5.0	28	18	4.98	----	3.20	"	"
66.51	22.0	13.73	1.05	4.8	22	14	5.02	----	2.37	"	"
67.00	22.5	13.99	0.81	3.6	11	7	5.05	----	2.43	Clayey SILT to Silty CLAY	"
67.51	26.4	16.35	0.90	3.4	13	8	5.09	----	2.95	"	"
68.04	23.0	14.19	0.74	3.2	12	7	5.12	----	2.49	"	120-130
68.57	72.4	44.50	1.83	2.5	29	18	5.16	----	9.07	Sandy SILT to Clayey SILT	130-140
69.07	55.8	34.16	1.88	3.4	28	17	5.20	----	6.85	Clayey SILT to Silty CLAY	"
69.52	26.5	16.17	1.51	5.7	27	16	5.23	----	2.94	CLAY	"
70.02	83.8	50.93	1.94	2.3	28	17	5.26	34	----	Silty SAND to Sandy SILT	"

DEPTH = Sampling interval (.1 feet)
Qc = Tip bearing resistance   TotStr = Total Stress using est. density**
Fs = Sleeve friction resistance   Phi = Soil friction angle*
Rf = Tip/Sleeve ratio   Su = Undrained Soil Strength* (Nk=10 for Qc<9 tsf)
SPT = Equivalent Standard Penetration Test* (Nk=12 for Qc=9 to 12 tsf) (Nk=15 for Qc>12 tsf)
References: * Robertson and Campanella, 1988
** Olsen, 1989 *** Durgunoglu & Mitchell, 1975

PROJECT: LEVEES - STEVENS CREEK
LOCATION: Mountain View CA
PROJ. NO.: 2227E(PGE-04)
Terminated at 70.0 feet

CPT NO.: CPT-6
DATE : 09-10-2008
TIME : 12:15:50
Groundwater estimated at 16.7 feet

PACIFIC GEOTECHNICAL
cpts by John Sarmiento & Associates

DEPTH (feet)	Qc (tsf)	Qc' (tsf)	Fs (tsf)	Rf (%)	SPT (N)	SPT' (N')	EffVtStr (ksf)	PHI (deg.)	SU (ksf)	SOIL BEHAVIOR TYPE	DENSITY RANGE (pcf)
0.53	123.2	197.12	4.23	3.4	49	79	0.06	----	16.42	Sandy SILT to Clayey SILT	130-140
1.05	67.7	108.32	3.51	5.2	68	108	0.13	----	9.02	Very Stiff Fine Grained *	"
1.53	43.7	69.92	2.43	5.6	44	70	0.20	----	5.81	CLAY	"
2.02	63.5	101.60	2.45	3.9	32	51	0.26	----	8.45	Clayey SILT to Silty CLAY	"
2.51	18.5	29.60	1.48	8.0	19	30	0.33	----	2.44	CLAY	"
3.06	29.2	46.72	1.56	5.3	29	47	0.40	----	3.87	"	"
3.55	31.7	50.72	1.86	5.9	32	51	0.47	----	4.20	"	"
4.02	41.1	65.76	2.55	6.2	41	66	0.53	----	5.44	"	"
4.52	41.7	66.72	3.22	7.7	42	67	0.60	----	5.52	"	"
5.04	94.7	151.52	5.91	6.2	95	152	0.67	----	12.58	Very Stiff Fine Grained *	>140
5.55	119.5	191.20	4.03	3.4	48	76	0.74	----	15.88	Sandy SILT to Clayey SILT	130-140
6.02	46.7	74.50	3.26	7.0	47	74	0.80	----	6.17	CLAY	"
6.52	140.1	213.64	5.62	4.0	140	214	0.88	----	18.62	Very Stiff Fine Grained *	>140
7.03	59.4	86.51	4.39	7.4	59	87	0.94	----	7.86	"	130-140
7.53	96.2	133.98	6.63	6.9	96	134	1.01	----	12.76	"	>140
8.05	55.8	75.65	3.71	6.6	56	76	1.09	----	7.37	CLAY	130-140
8.57	139.3	183.61	6.88	4.9	139	184	1.16	----	18.50	Very Stiff Fine Grained *	>140
9.03	243.5	312.77	10.82	4.4	244	313	1.22	----	32.39	"	"
9.57	141.2	176.14	6.44	4.6	141	176	1.30	----	18.74	"	"
10.00	68.2	83.16	4.17	6.1	68	83	1.36	----	9.00	"	130-140
10.52	28.6	33.92	2.22	7.8	29	34	1.42	----	3.72	CLAY	"
11.04	56.6	65.21	2.69	4.8	38	43	1.50	----	7.45	Silty CLAY to CLAY	"
11.56	246.0	277.10	3.59	1.5	49	55	1.57	44	----	SAND	"
12.02	119.8	132.26	2.76	2.3	40	44	1.63	40	----	Silty SAND to Sandy SILT	"
12.54	30.4	32.79	1.44	4.7	30	33	1.70	----	3.94	CLAY	"
13.08	17.4	18.38	0.93	5.3	17	18	1.77	----	2.20	"	120-130
13.53	16.0	16.68	0.79	4.9	16	17	1.82	----	2.01	"	"
14.01	17.3	17.77	1.07	6.2	17	18	1.89	----	2.18	"	130-140
14.58	19.3	19.47	1.15	6.0	19	19	1.96	----	2.44	"	"
15.05	18.5	18.49	1.17	6.3	19	18	2.03	----	2.33	"	"
15.56	19.2	19.16	1.15	6.0	19	19	2.10	----	2.42	"	"
16.04	19.1	19.04	1.18	6.2	19	19	2.16	----	2.40	"	"
16.52	21.0	20.92	1.16	5.5	21	21	2.20	----	2.65	"	"
17.10	27.4	27.27	1.31	4.8	27	27	2.24	----	3.50	"	"
17.56	26.5	26.36	1.19	4.5	18	18	2.27	----	3.38	Silty CLAY to CLAY	"
18.03	26.6	26.44	1.07	4.0	18	18	2.31	----	3.38	"	"
18.50	35.5	35.26	1.53	4.3	24	24	2.34	----	4.57	"	"
19.09	26.0	25.80	0.95	3.7	13	13	2.38	----	3.30	Clayey SILT to Silty CLAY	"
19.55	27.3	27.07	1.07	3.9	18	18	2.42	----	3.46	Silty CLAY to CLAY	"
20.02	23.8	23.59	0.91	3.8	16	16	2.45	----	2.99	"	"
20.58	22.7	22.48	1.02	4.5	23	22	2.49	----	2.84	CLAY	"
21.05	15.6	15.34	0.67	4.3	16	15	2.52	----	1.89	"	120-130
21.52	10.1	9.83	0.64	6.3	10	10	2.55	----	1.44	"	"
22.06	8.0	7.70	0.61	7.6	8	8	2.58	----	1.30	"	"
22.52	10.7	10.20	0.71	6.6	11	10	2.61	----	1.53	"	"
23.08	13.4	12.62	1.01	7.5	13	13	2.65	----	1.58	"	"
23.54	14.7	13.70	1.03	7.0	15	14	2.68	----	1.75	"	"
24.01	12.5	11.53	0.77	6.2	13	12	2.71	----	1.45	"	"
24.56	10.5	9.56	0.77	7.3	11	10	2.74	----	1.48	"	"
25.01	7.2	6.50	0.56	7.8	7	7	2.76	----	1.11	"	110-120
25.57	6.1	5.45	0.41	6.7	6	5	2.79	----	0.88	"	"
26.04	7.1	6.28	0.38	5.4	7	6	2.82	----	1.08	"	"
26.51	9.5	8.33	0.50	5.3	10	8	2.84	----	1.29	"	"
27.07	78.1	67.44	1.38	1.8	26	22	2.88	36	----	Silty SAND to Sandy SILT	130-140
27.53	213.5	182.67	1.62	0.8	43	37	2.91	41	----	SAND	110-120

PROJECT: LEVEES - STEVENS CREEK
LOCATION: Mountain View CA
PROJ. NO.: 2227E(PGE-04)
Terminated at 70.0 feet

CPT NO.: CPT-6
DATE : 09-10-2008
TIME : 12:15:50
Groundwater estimated at 16.7 feet

PACIFIC GEOTECHNICAL
cpts by John Sarmiento & Associates

DEPTH (feet)	Qc (tsf)	Qc' (tsf)	Fs (tsf)	Rf (%)	SPT (N)	SPT' (N')	EffVtStr (ksf)	PHI (deg.)	SU (ksf)	SOIL BEHAVIOR TYPE	DENSITY RANGE (pcf)
28.00	75.7	63.92	1.48	2.0	25	21	2.94	35	----	Silty SAND to Sandy SILT	130-140
28.52	43.8	36.43	1.60	3.7	22	18	2.98	----	5.59	Clayey SILT to Silty CLAY	"
29.06	215.7	177.77	1.57	0.7	43	36	3.01	41	----	SAND	110-120
29.58	343.7	281.97	2.58	0.8	57	47	3.04	44	----	Gravelly SAND to SAND	120-130
30.01	362.4	296.20	2.88	0.8	60	49	3.07	44	----	"	"
30.53	237.1	193.32	0.76	0.3	40	32	3.08	42	----	"	90-100
31.06	70.7	57.33	1.63	2.3	24	19	3.12	35	----	Silty SAND to Sandy SILT	130-140
31.56	55.1	44.45	2.07	3.8	28	22	3.16	----	7.07	Clayey SILT to Silty CLAY	"
32.01	37.6	30.19	2.40	6.4	38	30	3.19	----	4.73	CLAY	"
32.53	344.9	275.67	2.93	0.8	69	55	3.22	44	----	SAND	120-130
33.05	258.2	205.39	2.49	1.0	52	41	3.26	42	----	"	"
33.56	359.9	285.18	2.55	0.7	60	48	3.28	44	----	Gravelly SAND to SAND	110-120
34.07	372.8	294.47	1.86	0.5	62	49	3.31	44	----	"	100-110
34.57	345.5	271.67	3.19	0.9	69	54	3.34	44	----	SAND	120-130
35.08	308.1	241.31	1.69	0.5	51	40	3.36	43	----	Gravelly SAND to SAND	110-120
35.51	304.0	237.30	2.21	0.7	61	47	3.39	43	----	SAND	"
36.05	270.5	210.28	2.01	0.7	54	42	3.41	42	----	"	"
36.58	286.3	221.64	1.75	0.6	57	44	3.44	43	----	"	"
37.03	264.6	204.12	1.87	0.7	53	41	3.47	42	----	"	"
37.56	234.9	180.45	1.46	0.6	47	36	3.49	41	----	"	"
38.03	239.9	183.48	1.89	0.8	48	37	3.52	41	----	"	120-130
38.57	240.9	183.46	1.77	0.7	48	37	3.55	41	----	"	110-120
39.02	297.6	225.84	1.66	0.6	50	38	3.58	43	----	Gravelly SAND to SAND	"
39.56	271.1	204.67	2.15	0.8	54	41	3.61	42	----	SAND	120-130
40.02	274.4	206.40	1.72	0.6	55	41	3.63	42	----	"	110-120
40.56	210.6	157.98	0.65	0.3	42	32	3.65	41	----	"	90-100
41.02	33.5	25.00	1.83	5.5	34	25	3.68	----	4.12	CLAY	130-140
41.58	33.3	24.70	1.38	4.1	22	16	3.72	----	4.09	Silty CLAY to CLAY	"
42.05	28.6	21.10	1.27	4.4	19	14	3.76	----	3.45	"	"
42.51	28.9	21.21	1.19	4.1	19	14	3.79	----	3.49	"	"
43.07	83.6	60.96	1.31	1.6	28	20	3.83	35	----	Silty SAND to Sandy SILT	"
43.54	26.4	19.15	1.15	4.4	18	13	3.87	----	3.15	Silty CLAY to CLAY	"
44.02	14.1	10.18	0.62	4.4	14	10	3.90	----	1.50	CLAY	120-130
44.56	15.9	11.41	0.64	4.0	11	8	3.93	----	1.74	Silty CLAY to CLAY	"
45.03	10.5	7.50	0.49	4.7	11	8	3.96	----	1.27	CLAY	"
45.50	6.9	4.91	0.29	4.2	7	5	3.98	----	0.80	"	100-110
46.08	16.8	11.90	0.65	3.9	11	8	4.02	----	1.85	Silty CLAY to CLAY	120-130
46.56	18.1	12.78	0.78	4.3	18	13	4.05	----	2.02	CLAY	"
47.03	23.2	16.31	0.90	3.9	15	11	4.08	----	2.69	Silty CLAY to CLAY	130-140
47.51	19.1	13.37	1.28	6.7	19	13	4.12	----	2.14	CLAY	"
48.09	10.6	7.39	0.54	5.1	11	7	4.15	----	1.25	"	120-130
48.57	10.2	7.08	0.49	4.8	10	7	4.18	----	1.18	"	"
49.05	10.1	6.99	0.41	4.1	10	7	4.21	----	1.16	"	110-120
49.52	11.0	7.59	0.39	3.5	7	5	4.23	----	1.31	Silty CLAY to CLAY	"
50.01	14.7	10.11	0.57	3.9	10	7	4.26	----	1.53	"	120-130
50.50	16.7	11.44	0.59	3.5	11	8	4.29	----	1.80	"	"
51.07	17.3	11.80	0.59	3.4	12	8	4.33	----	1.87	"	"
51.54	14.1	9.58	0.57	4.0	14	10	4.36	----	1.44	CLAY	"
52.01	19.0	12.86	0.78	4.1	13	9	4.39	----	2.09	Silty CLAY to CLAY	"
52.58	22.0	14.82	1.10	5.0	22	15	4.43	----	2.49	CLAY	130-140
53.06	20.3	13.61	0.94	4.6	20	14	4.46	----	2.26	"	"
53.53	22.5	15.02	0.94	4.2	15	10	4.50	----	2.54	Silty CLAY to CLAY	"
54.00	23.9	15.89	1.02	4.3	16	11	4.53	----	2.73	"	"
54.58	27.1	17.92	1.19	4.4	18	12	4.57	----	3.15	"	"
55.05	25.5	16.79	1.05	4.1	17	11	4.61	----	2.93	"	"

PROJECT: LEVEES - STEVENS CREEK
LOCATION: Mountain View CA
PROJ. NO.: 2227E(PGE-04)
Terminated at 70.0 feet

CPT NO.: CPT-6
DATE : 09-10-2008
TIME : 12:15:50
Groundwater estimated at 16.7 feet

PACIFIC GEOTECHNICAL
cpts by John Sarmiento & Associates

DEPTH (feet)	Qc (tsf)	Qc' (tsf)	Fs (tsf)	Rf (%)	SPT (N)	SPT' (N')	EffVtStr (ksf)	PHI (deg.)	SU (ksf)	SOIL BEHAVIOR TYPE	DENSITY RANGE (pcf)
55.53	24.8	16.25	0.94	3.8	17	11	4.64	----	2.83	Silty CLAY to CLAY	130-140
56.08	26.5	17.27	0.97	3.7	13	9	4.68	----	3.05	Clayey SILT to Silty CLAY	"
56.55	13.0	8.44	0.51	3.9	13	8	4.71	----	1.25	CLAY	120-130
57.02	8.5	5.50	0.35	4.1	9	6	4.74	----	0.97	"	110-120
57.55	13.9	8.96	0.56	4.0	14	9	4.77	----	1.36	"	120-130
58.02	18.0	11.56	0.82	4.6	18	12	4.80	----	1.91	"	"
58.58	24.2	15.45	1.43	5.9	24	15	4.84	----	2.73	"	130-140
59.05	17.5	11.12	1.03	5.9	18	11	4.87	----	1.83	"	"
59.59	27.9	17.64	1.23	4.4	19	12	4.91	----	3.21	Silty CLAY to CLAY	"
60.04	34.8	21.91	1.75	5.0	35	22	4.95	----	4.13	CLAY	"
60.51	35.6	22.31	1.83	5.1	36	22	4.98	----	4.23	"	"
61.04	37.8	23.58	2.22	5.9	38	24	5.02	----	4.52	"	"
61.51	35.1	21.82	2.14	6.1	35	22	5.05	----	4.15	"	"
62.05	25.3	15.66	1.43	5.7	25	16	5.09	----	2.84	"	"
62.50	23.0	14.19	1.08	4.7	23	14	5.13	----	2.53	"	"
63.04	31.0	19.04	1.28	4.1	21	13	5.16	----	3.59	Silty CLAY to CLAY	"
63.58	26.6	16.27	1.26	4.7	27	16	5.20	----	3.00	CLAY	"
64.05	21.2	12.92	0.85	4.0	14	9	5.24	----	2.28	Silty CLAY to CLAY	"
64.60	23.7	14.38	0.98	4.1	16	10	5.28	----	2.61	"	"
65.04	26.8	16.21	1.00	3.7	13	8	5.31	----	3.02	Clayey SILT to Silty CLAY	"
65.57	24.3	14.64	0.98	4.0	16	10	5.35	----	2.68	Silty CLAY to CLAY	"
66.02	27.8	16.69	1.05	3.8	14	8	5.38	----	3.14	Clayey SILT to Silty CLAY	"
66.55	31.1	18.59	1.33	4.3	21	12	5.42	----	3.58	Silty CLAY to CLAY	"
67.02	24.4	14.47	1.55	6.4	24	14	5.49	----	2.67	CLAY	"
67.52	24.4	14.47	1.55	6.4	24	14	5.49	----	2.67	"	"
68.07	21.8	12.87	1.24	5.7	22	13	5.53	----	2.32	"	"
68.53	19.7	11.59	1.18	6.0	20	12	5.56	----	2.04	"	"
69.06	20.3	11.89	1.40	6.9	20	12	5.60	----	2.11	"	"
69.56	21.1	12.31	1.35	6.4	21	12	5.64	----	2.21	"	"
70.04	21.2	12.32	1.35	6.4	21	12	5.67	----	2.22	"	"

DEPTH = Sampling interval (.1 feet)
Qc = Tip bearing resistance TotStr = Total Stress using est. density**
Fs = Sleeve friction resistance Phi = Soil friction angle*
Rf = Tip/Sleeve ratio Su = Undrained Soil Strength* (Nk=10 for Qc<9 tsf)
SPT = Equivalent Standard Penetration Test* (Nk=12 for Qc=9 to 12 tsf) (Nk=15 for Qc>12 tsf)
References: * Robertson and Campanella, 1988
** Olsen, 1989 *** Durgunoglu & Mitchell, 1975

PROJECT: LEVEES - STEVENS CREEK
LOCATION: Mountain View CA
PROJ. NO.: 2227E(PGE-04)
Terminated at 70.0 feet

CPT NO.: CPT-7
DATE : 09-10-2008
TIME : 11:20:11
Groundwater measured at 20.5 feet

PACIFIC GEOTECHNICAL
cpts by John Sarmiento & Associates

DEPTH (feet)	Qc (tsf)	Qc' (tsf)	Fs (tsf)	Rf (%)	SPT (N)	SPT' (N')	EffVtStr (ksf)	PHI (deg.)	SU (ksf)	SOIL BEHAVIOR TYPE	DENSITY RANGE (pcf)
0.54	92.2	147.52	4.06	4.4	92	148	0.06	----	12.29	Very Stiff Fine Grained *	130-140
1.05	59.2	94.72	2.72	4.6	39	63	0.13	----	7.88	Silty CLAY to CLAY	"
1.52	53.0	84.80	1.82	3.4	27	42	0.20	----	7.05	Clayey SILT to Silty CLAY	"
2.05	56.0	89.60	2.10	3.7	28	45	0.27	----	7.45	"	"
2.57	30.1	48.16	1.25	4.2	20	32	0.34	----	3.99	Silty CLAY to CLAY	"
3.01	57.0	91.20	1.15	2.0	19	30	0.40	37	----	Silty SAND to Sandy SILT	"
3.53	36.3	58.08	2.45	6.7	36	58	0.47	----	4.81	CLAY	"
4.06	21.0	33.60	1.36	6.5	21	34	0.54	----	2.76	"	"
4.50	16.1	25.76	1.06	6.6	16	26	0.60	----	2.11	"	"
5.04	48.8	78.08	2.46	5.0	33	52	0.67	----	6.46	Silty CLAY to CLAY	"
5.52	23.4	37.44	1.85	7.9	23	37	0.74	----	3.07	CLAY	"
6.04	42.1	67.13	2.38	5.7	42	67	0.81	----	5.56	"	"
6.57	65.8	100.20	3.42	5.2	66	100	0.88	----	8.71	Very Stiff Fine Grained *	"
7.08	74.8	108.73	4.25	5.7	75	109	0.95	----	9.91	"	"
7.51	100.4	140.34	4.10	4.1	100	140	1.00	----	13.32	"	"
8.02	66.6	90.62	5.58	8.4	67	91	1.08	----	8.81	"	>140
8.53	70.9	93.93	4.19	5.9	71	94	1.14	----	9.38	"	130-140
9.01	141.9	183.08	5.88	4.1	142	183	1.21	----	18.84	"	>140
9.52	178.2	223.51	7.80	4.4	178	224	1.28	----	23.67	"	"
10.03	141.2	172.28	6.57	4.7	141	172	1.35	----	18.74	"	"
10.52	148.5	176.46	3.03	2.0	50	59	1.42	41	----	Silty SAND to Sandy SILT	130-140
11.03	38.8	44.82	2.39	6.2	39	45	1.49	----	5.07	CLAY	"
11.53	46.8	52.86	2.19	4.7	31	35	1.56	----	6.14	Silty CLAY to CLAY	"
12.01	26.0	28.76	1.40	5.4	26	29	1.62	----	3.36	CLAY	"
12.55	16.0	17.31	0.75	4.7	16	17	1.69	----	2.02	"	120-130
13.01	14.5	15.39	0.62	4.3	15	15	1.75	----	1.82	"	"
13.56	24.3	25.35	2.89	11.9	24	25	1.82	----	3.12	"	130-140
14.00	139.9	143.84	6.99	5.0	140	144	1.88	----	18.53	Very Stiff Fine Grained *	>140
14.55	66.3	67.00	2.98	4.5	33	33	1.96	----	8.71	Clayey SILT to Silty CLAY	130-140
15.00	13.8	13.80	0.74	5.4	14	14	2.01	----	1.71	CLAY	120-130
15.53	14.7	14.68	0.62	4.2	15	15	2.08	----	1.82	"	"
16.08	20.0	19.94	0.93	4.7	20	20	2.15	----	2.52	"	130-140
16.54	16.8	16.73	1.09	6.5	17	17	2.22	----	2.09	"	"
17.08	16.3	16.21	0.97	6.0	16	16	2.28	----	2.02	"	120-130
17.55	16.5	16.39	1.01	6.1	17	16	2.35	----	2.04	"	130-140
18.02	14.6	14.48	0.97	6.6	15	14	2.40	----	1.79	"	120-130
18.53	16.9	16.74	0.99	5.9	17	17	2.47	----	2.09	"	130-140
19.08	18.3	17.82	0.93	5.1	18	18	2.55	----	2.27	"	"
19.54	26.2	24.98	1.12	4.3	17	17	2.61	----	3.32	Silty CLAY to CLAY	"
20.00	20.2	18.85	0.95	4.7	20	19	2.67	----	2.52	CLAY	"
20.54	16.7	15.21	0.74	4.4	17	15	2.74	----	2.04	"	120-130
21.07	30.0	26.61	1.27	4.2	20	18	2.81	----	3.81	Silty CLAY to CLAY	130-140
21.53	43.2	37.45	3.04	7.0	43	37	2.87	----	5.57	CLAY	"
22.05	34.9	29.44	2.24	6.4	35	29	2.94	----	4.46	"	"
22.52	23.5	19.37	1.21	5.1	24	19	3.01	----	2.93	"	"
23.05	11.7	9.55	0.63	5.4	12	10	3.07	----	1.69	"	120-130
23.50	9.0	7.29	0.58	6.4	9	7	3.13	----	1.24	"	"
24.05	8.0	6.42	0.49	6.1	8	6	3.19	----	1.28	"	110-120
24.51	9.1	7.25	0.59	6.5	9	7	3.25	----	1.25	"	120-130
25.08	5.0	3.97	0.28	5.6	5	4	3.27	----	0.67	"	100-110
25.54	4.1	3.24	0.35	8.5	4	3	3.29	----	0.48	Organic Material	"
26.00	11.6	9.14	0.74	6.4	12	9	3.32	----	1.65	CLAY	120-130
26.54	12.0	9.41	0.74	6.2	12	9	3.36	----	1.37	"	"
27.01	10.9	8.51	0.81	7.4	11	9	3.39	----	1.52	"	"
27.55	10.8	8.39	0.67	6.2	11	8	3.42	----	1.50	"	"

PROJECT: LEVEES - STEVENS CREEK
LOCATION: Mountain View CA
PROJ. NO.: 2227E(PGE-04)
Terminated at 70.0 feet

CPT NO.: CPT-7
DATE : 09-10-2008
TIME : 11:20:11
Groundwater measured at 20.5 feet

PACIFIC GEOTECHNICAL
cpts by John Sarmiento & Associates

DEPTH (feet)	Qc (tsf)	Qc' (tsf)	Fs (tsf)	Rf (%)	SPT (N)	SPT' (N')	EffVtStr (ksf)	PHI (deg.)	SU (ksf)	SOIL BEHAVIOR TYPE	DENSITY RANGE (pcf)
28.00	7.2	5.57	0.54	7.5	7	6	3.44	----	1.07	CLAY	110-120
28.53	7.6	5.86	0.46	6.1	8	6	3.47	----	1.15	"	"
29.00	6.4	4.91	0.40	6.3	6	5	3.50	----	0.90	"	"
29.56	3.9	2.99	0.24	6.2	4	3	3.51	----	0.40	"	90-100
30.02	7.2	5.49	0.32	4.4	7	5	3.54	----	1.05	"	110-120
30.57	10.6	8.05	0.88	8.3	11	8	3.57	----	1.44	"	120-130
31.03	46.7	35.27	2.32	5.0	31	24	3.61	----	5.96	Silty CLAY to CLAY	130-140
31.55	61.9	46.48	3.50	5.7	62	46	3.64	----	7.98	Very Stiff Fine Grained *	"
32.01	91.2	68.18	1.10	1.2	23	17	3.67	36	----	SAND to Silty SAND	120-130
32.51	37.4	27.80	0.83	2.2	15	11	3.71	----	4.71	Sandy SILT to Clayey SILT	130-140
33.06	13.7	10.13	0.52	3.8	9	7	3.74	----	1.54	Silty CLAY to CLAY	120-130
33.51	14.3	10.53	0.64	4.5	14	11	3.77	----	1.62	CLAY	"
34.05	17.7	12.96	0.70	4.0	12	9	3.81	----	2.07	Silty CLAY to CLAY	"
34.55	14.6	10.64	0.63	4.3	15	11	3.84	----	1.65	CLAY	"
35.01	5.7	4.14	0.30	5.3	6	4	3.86	----	0.69	"	100-110
35.57	6.2	4.49	0.20	3.2	6	4	3.88	----	0.78	"	"
36.03	8.1	5.84	0.32	4.0	8	6	3.90	----	1.16	"	110-120
36.59	17.0	12.19	0.84	4.9	17	12	3.94	----	1.95	"	120-130
37.05	68.3	48.71	1.02	1.5	23	16	3.97	34	----	Silty SAND to Sandy SILT	130-140
37.52	65.3	46.35	0.78	1.2	22	15	4.00	34	----	"	120-130
38.05	40.9	28.90	1.26	3.1	20	14	4.04	----	5.13	Clayey SILT to Silty CLAY	130-140
38.58	88.9	62.60	0.72	0.8	22	16	4.07	35	----	SAND to Silty SAND	110-120
39.03	84.6	59.37	0.82	1.0	21	15	4.10	35	----	"	120-130
39.55	97.8	68.40	0.80	0.8	24	17	4.12	36	----	"	110-120
40.08	112.5	78.52	0.37	0.3	23	16	4.14	37	----	SAND	90-100
40.52	63.7	44.28	1.08	1.7	21	15	4.17	33	----	Silty SAND to Sandy SILT	130-140
41.02	163.5	113.44	0.50	0.3	33	23	4.19	39	----	SAND	90-100
41.56	25.2	17.40	1.35	5.4	25	17	4.23	----	3.01	CLAY	130-140
42.01	15.6	10.73	0.65	4.2	16	11	4.26	----	1.72	"	120-130
42.54	10.1	6.93	0.49	4.9	10	7	4.29	----	1.23	"	110-120
43.09	7.6	5.19	0.83	10.9	8	5	4.32	----	0.97	Organic Material	120-130
43.53	202.2	137.74	0.95	0.5	40	28	4.34	40	----	SAND	100-110
44.02	63.2	42.86	1.63	2.6	25	17	4.37	----	8.05	Sandy SILT to Clayey SILT	130-140
44.57	17.2	11.61	0.82	4.8	17	12	4.41	----	1.92	CLAY	120-130
45.02	31.6	21.26	0.68	2.2	13	9	4.44	----	3.83	Sandy SILT to Clayey SILT	"
45.56	38.2	25.58	1.79	4.7	25	17	4.48	----	4.71	Silty CLAY to CLAY	130-140
46.01	81.1	54.11	0.94	1.2	20	14	4.50	34	----	SAND to Silty SAND	120-130
46.56	22.2	14.75	0.75	3.4	11	7	4.54	----	2.57	Clayey SILT to Silty CLAY	"
47.02	13.6	9.00	0.63	4.6	14	9	4.57	----	1.42	CLAY	"
47.55	14.1	9.29	0.57	4.0	14	9	4.60	----	1.48	"	"
48.00	15.1	9.91	0.68	4.5	15	10	4.63	----	1.61	"	"
48.56	13.0	8.50	0.61	4.7	13	8	4.66	----	1.32	"	"
49.00	12.1	7.88	0.46	3.8	12	8	4.69	----	1.20	"	"
49.56	10.8	7.01	0.39	3.6	11	7	4.72	----	1.28	"	110-120
50.02	11.1	7.18	0.40	3.6	7	5	4.75	----	1.32	Silty CLAY to CLAY	"
50.56	32.2	20.71	1.56	4.8	32	21	4.78	----	3.87	CLAY	130-140
51.06	55.2	35.37	0.76	1.4	18	12	4.82	32	----	Silty SAND to Sandy SILT	120-130
51.51	70.8	45.16	1.24	1.8	24	15	4.85	33	----	"	130-140
52.04	294.1	186.65	4.55	1.5	59	37	4.89	42	----	SAND	"
52.54	353.9	223.81	2.24	0.6	59	37	4.91	43	----	Gravelly SAND to SAND	110-120
53.05	381.4	240.16	4.10	1.1	76	48	4.94	43	----	SAND	120-130
53.57	87.9	55.07	3.54	4.0	44	28	4.98	----	11.27	Clayey SILT to Silty CLAY	130-140
54.08	24.1	15.03	1.75	7.3	24	15	5.02	----	2.76	CLAY	"
54.50	31.3	19.46	1.71	5.5	31	19	5.05	----	3.71	"	"
55.01	23.5	14.55	1.29	5.5	24	15	5.09	----	2.67	"	"

PROJECT: LEVEES - STEVENS CREEK
LOCATION: Mountain View CA
PROJ. NO.: 2227E(PGE-04)
Terminated at 70.0 feet

CPT NO.: CPT-7
DATE : 09-10-2008
TIME : 11:20:11
Groundwater measured at 20.5 feet

PACIFIC GEOTECHNICAL
cpts by John Sarmiento & Associates

DEPTH (feet)	Qc (tsf)	Qc' (tsf)	Fs (tsf)	Rf (%)	SPT (N)	SPT' (N')	EffVtStr (ksf)	PHI (deg.)	SU (ksf)	SOIL BEHAVIOR TYPE	DENSITY RANGE (pcf)
55.54	30.0	18.50	1.68	5.6	30	19	5.13	----	3.53	CLAY	130-140
56.08	27.3	16.77	1.34	4.9	27	17	5.16	----	3.16	"	"
56.54	25.5	15.61	1.37	5.4	26	16	5.20	----	2.92	"	"
57.04	25.5	15.61	1.37	5.4	26	16	5.20	----	2.92	"	"
57.54	47.5	28.74	2.83	6.0	48	29	5.31	----	5.84	"	"
58.04	47.5	28.74	2.83	6.0	48	29	5.31	----	5.84	"	"
58.57	42.5	25.61	2.62	6.2	43	26	5.35	----	5.17	"	"
59.01	31.8	19.09	2.16	6.8	32	19	5.38	----	3.74	"	"
59.55	24.9	14.89	1.77	7.1	25	15	5.42	----	2.81	"	"
60.08	20.0	11.91	1.40	7.0	20	12	5.46	----	2.16	"	"
60.57	17.4	10.32	1.15	6.6	17	10	5.49	----	1.80	"	"
61.01	21.2	12.53	1.26	5.9	21	13	5.52	----	2.31	"	"
61.53	25.1	14.77	1.12	4.5	17	10	5.56	----	2.82	Silty CLAY to CLAY	"
62.06	25.5	14.94	1.31	5.1	26	15	5.60	----	2.87	CLAY	"
62.58	27.9	16.28	1.44	5.2	28	16	5.64	----	3.19	"	"
63.02	26.3	15.29	1.40	5.3	26	15	5.67	----	2.97	"	"
63.54	27.1	15.69	1.57	5.8	27	16	5.71	----	3.07	"	"
64.07	28.2	16.26	1.45	5.1	28	16	5.75	----	3.21	"	"
64.51	28.0	16.09	1.53	5.5	28	16	5.78	----	3.18	"	"
65.04	31.3	17.90	1.66	5.3	31	18	5.82	----	3.62	"	"
65.56	33.2	18.91	1.75	5.3	33	19	5.85	----	3.87	"	"
66.09	29.2	16.56	1.62	5.5	29	17	5.89	----	3.33	"	"
66.52	23.4	13.22	1.41	6.0	23	13	5.92	----	2.55	"	"
67.02	21.8	12.27	1.28	5.9	22	12	5.96	----	2.33	"	"
67.55	28.0	15.68	1.64	5.9	28	16	6.00	----	3.15	"	"
68.08	25.2	14.07	1.76	7.0	25	14	6.04	----	2.78	"	"
68.52	20.7	11.52	1.41	6.8	21	12	6.07	----	2.17	"	"
69.04	19.6	10.87	1.26	6.4	20	11	6.11	----	2.02	"	"
69.50	17.8	9.84	1.14	6.4	18	10	6.14	----	1.78	"	"
70.03	19.9	10.97	1.90	9.5	20	11	6.18	----	2.05	"	"

DEPTH = Sampling interval (.1 feet)
Qc = Tip bearing resistance   TotStr = Total Stress using est. density**
Fs = Sleeve friction resistance   Phi = Soil friction angle*
Rf = Tip/Sleeve ratio   Su = Undrained Soil Strength* (Nk=10 for Qc<9 tsf)
SPT = Equivalent Standard Penetration Test* (Nk=12 for Qc=9 to 12 tsf) (Nk=15 for Qc>12 tsf)
References: * Robertson and Campanella, 1988
** Olsen, 1989 *** Durgunoglu & Mitchell, 1975

PROJECT: LEVEES - STEVENS CREEK
LOCATION: Mountain View CA
PROJ. NO.: 2227E(PGE-04)
Terminated at 70.0 feet

CPT NO.: CPT-8
DATE : 09-09-2008
TIME : 08:40:29
Groundwater measured at 24.6 feet

PACIFIC GEOTECHNICAL
cpts by John Sarmiento & Associates

DEPTH (feet)	Qc (tsf)	Qc' (tsf)	Fs (tsf)	Rf (%)	SPT (N)	SPT' (N')	EffVtStr (ksf)	PHI (deg.)	SU (ksf)	SOIL BEHAVIOR TYPE	DENSITY RANGE (pcf)
0.55	193.6	309.76	2.47	1.3	39	62	0.06	45	----	SAND	120-130
1.05	57.0	91.20	3.44	6.0	57	91	0.13	----	7.59	CLAY	"
1.54	63.6	101.76	1.58	2.5	25	41	0.20	----	8.47	Sandy SILT to Clayey SILT	"
2.01	89.4	143.04	1.85	2.1	30	48	0.26	40	----	Silty SAND to Sandy SILT	"
2.50	131.0	209.60	3.25	2.5	44	70	0.33	42	----	"	"
3.02	50.8	81.28	1.65	3.2	20	33	0.40	----	6.75	Sandy SILT to Clayey SILT	"
3.57	64.5	103.20	3.34	5.2	65	103	0.47	----	8.57	Very Stiff Fine Grained *	"
4.04	41.1	65.76	1.26	3.1	16	26	0.54	----	5.44	Sandy SILT to Clayey SILT	"
4.52	65.8	105.28	3.34	5.1	66	105	0.60	----	8.73	Very Stiff Fine Grained *	"
5.01	50.9	81.44	1.67	3.3	25	41	0.67	----	6.74	Clayey SILT to Silty CLAY	"
5.56	34.8	55.68	1.22	3.5	17	28	0.74	----	4.59	"	"
6.07	50.6	80.46	2.57	5.1	34	54	0.81	----	6.69	Silty CLAY to CLAY	"
6.58	57.1	86.88	2.18	3.8	29	43	0.88	----	7.55	Clayey SILT to Silty CLAY	"
7.01	28.5	41.71	2.17	7.6	29	42	0.94	----	3.74	CLAY	"
7.54	65.6	91.58	3.97	6.1	66	92	1.01	----	8.68	Very Stiff Fine Grained *	"
8.07	54.9	74.60	2.92	5.3	55	75	1.08	----	7.25	CLAY	"
8.51	32.8	43.56	2.13	6.5	33	44	1.14	----	4.30	"	"
9.08	62.6	80.62	3.93	6.3	63	81	1.22	----	8.27	Very Stiff Fine Grained *	"
9.52	41.7	52.46	2.64	6.3	42	52	1.27	----	5.48	CLAY	"
10.01	345.5	423.25	10.03	2.9	173	212	1.34	46	----	SAND to Clayey SAND *	>140
10.54	233.6	278.08	5.24	2.2	78	93	1.42	44	----	Silty SAND to Sandy SILT	"
11.07	39.7	45.91	2.12	5.3	40	46	1.49	----	5.19	CLAY	"
11.58	24.0	27.12	1.11	4.6	24	27	1.56	----	3.10	"	"
12.01	16.2	17.99	0.70	4.3	16	18	1.61	----	2.05	"	120-130
12.54	11.5	12.52	0.43	3.7	12	13	1.67	----	1.78	"	110-120
13.08	11.0	11.71	0.62	5.6	11	12	1.74	----	1.69	"	120-130
13.54	10.5	11.02	0.50	4.8	11	11	1.79	----	1.60	"	"
14.09	14.4	14.85	1.40	9.7	14	15	1.87	----	1.80	"	130-140
14.55	97.6	99.20	1.57	1.6	33	33	1.93	38	----	Silty SAND to Sandy SILT	"
15.00	45.2	45.27	1.23	2.7	18	18	1.99	----	5.89	Sandy SILT to Clayey SILT	"
15.58	17.8	17.78	0.76	4.3	18	18	2.07	----	2.24	CLAY	120-130
16.04	14.5	14.46	0.54	3.7	10	10	2.12	----	1.79	Silty CLAY to CLAY	"
16.58	16.2	16.14	0.83	5.1	16	16	2.19	----	2.01	CLAY	"
17.03	19.1	19.00	1.36	7.1	19	19	2.25	----	2.40	"	130-140
17.57	18.5	18.38	1.17	6.3	19	18	2.32	----	2.31	"	"
18.02	19.1	18.95	1.27	6.6	19	19	2.38	----	2.39	"	"
18.58	21.2	21.00	1.30	6.1	21	21	2.46	----	2.66	"	"
19.03	22.4	22.03	1.20	5.4	22	22	2.52	----	2.82	"	"
19.57	21.7	20.81	1.01	4.7	22	21	2.59	----	2.72	"	"
20.02	18.3	17.21	0.76	4.2	12	11	2.65	----	2.26	Silty CLAY to CLAY	120-130
20.56	13.4	12.30	0.51	3.8	9	8	2.72	----	1.61	"	"
21.01	13.3	11.96	0.50	3.8	9	8	2.77	----	1.59	"	"
21.56	10.9	9.56	0.48	4.4	11	10	2.84	----	1.58	CLAY	"
22.07	18.1	15.50	0.46	2.5	9	8	2.91	----	2.22	Clayey SILT to Silty CLAY	"
22.57	9.2	7.68	0.54	5.9	9	8	2.97	----	1.29	CLAY	"
23.03	19.8	16.28	0.86	4.3	20	16	3.03	----	2.44	"	"
23.55	14.2	11.57	0.62	4.4	14	12	3.09	----	1.69	"	"
24.01	12.2	9.86	0.40	3.3	8	7	3.14	----	1.42	Silty CLAY to CLAY	110-120
24.54	10.8	8.70	0.44	4.1	11	9	3.17	----	1.53	CLAY	"
25.01	10.8	8.67	0.37	3.4	7	6	3.20	----	1.53	Silty CLAY to CLAY	"
25.56	17.9	14.29	0.68	3.8	12	10	3.23	----	2.16	"	120-130
26.01	19.8	15.74	0.81	4.1	13	10	3.26	----	2.41	"	"
26.54	25.1	19.85	0.90	3.6	13	10	3.30	----	3.12	Clayey SILT to Silty CLAY	130-140
27.08	26.9	21.15	1.04	3.9	18	14	3.34	----	3.35	Silty CLAY to CLAY	"
27.53	44.6	34.90	1.00	2.2	18	14	3.37	----	5.71	Sandy SILT to Clayey SILT	"

PROJECT: LEVEES - STEVENS CREEK
LOCATION: Mountain View CA
PROJ. NO.: 2227E(PGE-04)
Terminated at 70.0 feet

CPT NO.: CPT-8
DATE : 09-09-2008
TIME : 08:40:29
Groundwater measured at 24.6 feet

PACIFIC GEOTECHNICAL
cpts by John Sarmiento & Associates

DEPTH (feet)	Qc (tsf)	Qc' (tsf)	Fs (tsf)	Rf (%)	SPT (N)	SPT' (N')	EffVtStr (ksf)	PHI (deg.)	SU (ksf)	SOIL BEHAVIOR TYPE	DENSITY RANGE (pcf)
28.08	13.0	10.12	0.51	3.9	13	10	3.40	----	1.49	CLAY	120-130
28.54	21.5	16.65	1.00	4.7	22	17	3.44	----	2.62	"	130-140
29.07	19.3	14.87	1.21	6.3	19	15	3.48	----	2.32	"	"
29.52	17.0	13.03	1.07	6.3	17	13	3.51	----	2.01	"	"
30.07	16.3	12.43	0.89	5.5	16	12	3.54	----	1.91	"	120-130
30.54	14.2	10.78	0.53	3.7	9	7	3.57	----	1.63	Silty CLAY to CLAY	"
31.07	15.7	11.86	0.76	4.8	16	12	3.61	----	1.82	CLAY	"
31.53	15.3	11.51	0.60	3.9	10	8	3.63	----	1.77	Silty CLAY to CLAY	"
32.06	17.1	12.79	0.66	3.9	11	9	3.67	----	2.00	"	"
32.50	21.9	16.30	0.83	3.8	15	11	3.70	----	2.64	"	130-140
33.04	25.0	18.50	0.97	3.9	17	12	3.74	----	3.05	"	"
33.58	19.4	14.28	0.85	4.4	19	14	3.77	----	2.30	CLAY	120-130
34.02	19.5	14.29	0.84	4.3	20	14	3.80	----	2.31	"	"
34.55	26.2	19.09	1.21	4.6	26	19	3.84	----	3.19	"	130-140
35.08	21.3	15.42	1.04	4.9	21	15	3.88	----	2.54	"	"
35.53	17.6	12.69	0.78	4.4	18	13	3.91	----	2.04	"	120-130
36.07	53.3	38.18	1.63	3.1	21	15	3.94	----	6.79	Sandy SILT to Clayey SILT	130-140
36.50	44.1	31.43	2.28	5.2	44	31	3.98	----	5.56	CLAY	"
37.03	14.5	10.28	1.16	8.0	15	10	4.01	----	1.61	"	"
37.57	11.4	8.05	0.80	7.0	11	8	4.05	----	1.49	"	120-130
38.08	13.6	9.56	0.82	6.0	14	10	4.08	----	1.48	"	"
38.53	12.1	8.48	0.65	5.4	12	8	4.11	----	1.28	"	"
39.06	14.9	10.40	0.74	5.0	15	10	4.14	----	1.65	"	"
39.51	27.5	19.12	1.20	4.4	18	13	4.17	----	3.32	Silty CLAY to CLAY	130-140
40.04	32.4	22.42	1.57	4.8	32	22	4.21	----	3.97	CLAY	"
40.58	27.9	19.21	1.44	5.2	28	19	4.25	----	3.37	"	"
41.01	24.5	16.81	1.26	5.1	25	17	4.28	----	2.91	"	"
41.53	19.4	13.25	0.92	4.7	19	13	4.32	----	2.23	"	"
42.06	22.9	15.56	0.90	3.9	15	10	4.36	----	2.69	Silty CLAY to CLAY	"
42.50	14.3	9.68	0.65	4.5	14	10	4.39	----	1.54	CLAY	120-130
43.03	14.2	9.57	0.54	3.8	9	6	4.42	----	1.52	Silty CLAY to CLAY	"
43.56	16.5	11.08	0.88	5.3	17	11	4.45	----	1.82	CLAY	"
44.06	15.1	10.10	0.61	4.0	15	10	4.48	----	1.63	"	"
44.50	13.2	8.80	0.51	3.9	13	9	4.51	----	1.37	"	"
45.03	7.7	5.12	0.27	3.5	8	5	4.53	----	0.96	"	100-110
45.57	10.9	7.22	0.36	3.3	7	5	4.56	----	1.32	Silty CLAY to CLAY	110-120
46.00	9.8	6.47	0.31	3.2	7	4	4.59	----	1.14	"	"
46.53	10.6	6.97	0.38	3.6	11	7	4.61	----	1.27	CLAY	"
47.06	14.4	9.43	0.69	4.8	14	9	4.65	----	1.51	"	120-130
47.60	13.9	9.07	0.73	5.3	14	9	4.68	----	1.44	"	"
48.05	14.9	9.68	0.73	4.9	15	10	4.71	----	1.57	"	"
48.57	17.3	11.19	0.83	4.8	17	11	4.74	----	1.89	"	"
49.01	13.4	8.64	0.61	4.6	13	9	4.77	----	1.36	"	"
49.54	9.7	6.23	0.37	3.8	10	6	4.80	----	1.08	"	110-120
50.06	11.1	7.10	0.30	2.7	7	5	4.82	----	1.31	Silty CLAY to CLAY	"
50.59	11.6	7.40	0.25	2.2	6	4	4.85	----	1.39	Clayey SILT to Silty CLAY	"
51.03	14.1	8.96	0.24	1.7	7	4	4.88	----	1.44	"	"
51.56	19.2	12.15	0.39	2.0	8	5	4.91	----	2.12	Sandy SILT to Clayey SILT	120-130
52.00	16.5	10.40	0.47	2.8	8	5	4.94	----	1.75	Clayey SILT to Silty CLAY	"
52.52	16.2	10.17	0.49	3.0	8	5	4.97	----	1.71	"	"
53.05	14.4	9.00	0.49	3.4	10	6	5.00	----	1.47	Silty CLAY to CLAY	"
53.58	16.2	10.09	0.42	2.6	8	5	5.03	----	1.70	Clayey SILT to Silty CLAY	"
54.02	20.4	12.66	0.94	4.6	20	13	5.07	----	2.26	CLAY	130-140
54.51	54.4	33.64	1.19	2.2	22	13	5.10	----	6.79	Sandy SILT to Clayey SILT	"
55.03	35.9	22.11	1.26	3.5	18	11	5.14	----	4.31	Clayey SILT to Silty CLAY	"

PROJECT: LEVEES - STEVENS CREEK
LOCATION: Mountain View CA
PROJ. NO.: 2227E(PGE-04)
Terminated at 70.0 feet

CPT NO.: CPT-8
DATE : 09-09-2008
TIME : 08:40:29
Groundwater measured at 24.6 feet

PACIFIC GEOTECHNICAL
cpts by John Sarmiento & Associates

DEPTH (feet)	Qc (tsf)	Qc' (tsf)	Fs (tsf)	Rf (%)	SPT (N)	SPT' (N')	EffVtStr (ksf)	PHI (deg.)	SU (ksf)	SOIL BEHAVIOR TYPE	DENSITY RANGE (pcf)
55.55	25.3	15.52	0.99	3.9	17	10	5.18	----	2.90	Silty CLAY to CLAY	130-140
56.06	65.3	39.90	1.73	2.6	26	16	5.21	----	8.23	Sandy SILT to Clayey SILT	"
56.56	96.3	58.61	1.82	1.9	32	20	5.25	35	----	Silty SAND to Sandy SILT	"
57.08	60.5	36.68	2.35	3.9	30	18	5.29	----	7.58	Clayey SILT to Silty CLAY	"
57.55	161.0	97.30	1.47	0.9	32	19	5.32	38	----	SAND	120-130
58.05	131.3	79.04	1.84	1.4	33	20	5.35	37	----	SAND to Silty SAND	130-140
58.54	87.3	52.35	1.74	2.0	29	17	5.39	34	----	Silty SAND to Sandy SILT	"
59.04	26.5	15.83	1.28	4.8	27	16	5.43	----	3.03	CLAY	"
59.54	16.1	9.58	1.00	6.2	16	10	5.46	----	1.64	"	120-130
60.04	95.5	56.62	1.70	1.8	32	19	5.49	35	----	Silty SAND to Sandy SILT	130-140
60.54	36.3	21.44	1.34	3.7	18	11	5.53	----	4.32	Clayey SILT to Silty CLAY	"
61.07	45.6	26.81	1.28	2.8	18	11	5.57	----	5.55	Sandy SILT to Clayey SILT	"
61.58	17.0	9.96	0.52	3.1	9	5	5.60	----	1.74	Clayey SILT to Silty CLAY	120-130
62.01	12.3	7.19	0.38	3.1	8	5	5.62	----	1.11	Silty CLAY to CLAY	110-120
62.52	21.0	12.22	0.98	4.7	21	12	5.66	----	2.26	CLAY	130-140
63.04	136.9	79.35	4.14	3.0	55	32	5.70	----	17.71	Sandy SILT to Clayey SILT	"
63.54	243.4	140.51	3.65	1.5	49	28	5.73	40	----	SAND	"
64.05	233.4	134.24	2.57	1.1	47	27	5.77	40	----	"	120-130
64.55	190.6	109.24	1.90	1.0	38	22	5.80	39	----	"	"
65.04	38.5	21.98	1.52	3.9	19	11	5.83	----	4.57	Clayey SILT to Silty CLAY	130-140
65.54	10.7	6.09	0.32	3.0	7	4	5.86	----	1.08	Silty CLAY to CLAY	110-120
66.04	11.3	6.41	0.27	2.4	6	3	5.89	----	1.17	Clayey SILT to Silty CLAY	"
66.56	11.3	6.39	0.29	2.6	6	3	5.91	----	1.17	"	"
67.00	13.8	7.78	0.46	3.3	9	5	5.94	----	1.27	Silty CLAY to CLAY	120-130
67.58	26.9	15.09	1.11	4.1	18	10	5.98	----	3.01	"	130-140
68.02	39.0	21.81	2.39	6.1	39	22	6.02	----	4.62	CLAY	"
68.54	33.5	18.67	2.08	6.2	34	19	6.05	----	3.88	"	"
69.06	23.5	13.05	1.38	5.9	24	13	6.09	----	2.54	"	"
69.58	23.9	13.23	1.20	5.0	24	13	6.13	----	2.59	"	"
70.03	22.0	12.14	1.03	4.7	22	12	6.16	----	2.33	"	"

DEPTH = Sampling interval (.1 feet)
Qc = Tip bearing resistance   TotStr = Total Stress using est. density**
Fs = Sleeve friction resistance   Phi = Soil friction angle*
Rf = Tip/Sleeve ratio   Su = Undrained Soil Strength* (Nk=10 for Qc<9 tsf)
SPT = Equivalent Standard Penetration Test* (Nk=12 for Qc=9 to 12 tsf) (Nk=15 for Qc>12 tsf)
References: * Robertson and Campanella, 1988
** Olsen, 1989 *** Durgunoglu & Mitchell, 1975

PROJECT: LEVEES - STEVENS CREEK
LOCATION: Mountain View CA
PROJ. NO.: 2227E(PGE-04)
Terminated at 70.0 feet

CPT NO.: CPT-9
DATE : 09-10-2008
TIME : 13:51:50
Groundwater measured at 10.3 feet

PACIFIC GEOTECHNICAL
cpts by John Sarmiento & Associates

DEPTH (feet)	Qc (tsf)	Qc' (tsf)	Fs (tsf)	Rf (%)	SPT (N)	SPT' (N')	EffVtStr (ksf)	PHI (deg.)	SU (ksf)	SOIL BEHAVIOR TYPE	DENSITY RANGE (pcf)
0.50	666.3	1066.1	10.50	1.6	133	213	0.06	>48	----	SAND	130-140
1.03	246.1	393.76	5.02	2.0	62	98	0.13	46	----	SAND to Silty SAND	"
1.50	78.6	125.76	4.84	6.2	79	126	0.19	----	10.47	Very Stiff Fine Grained *	"
2.01	24.9	39.84	1.20	4.8	25	40	0.26	----	3.30	CLAY	"
2.56	25.0	40.00	1.17	4.7	25	40	0.34	----	3.31	"	"
3.06	26.8	42.88	1.24	4.6	27	43	0.40	----	3.55	"	"
3.58	21.7	34.72	1.24	5.7	22	35	0.47	----	2.86	"	"
4.02	25.2	40.32	1.45	5.8	25	40	0.53	----	3.32	"	"
4.58	28.1	44.96	1.51	5.4	28	45	0.61	----	3.71	"	"
5.08	20.2	32.32	1.11	5.5	20	32	0.68	----	2.65	"	"
5.51	18.8	30.08	0.84	4.5	19	30	0.73	----	2.46	"	120-130
6.07	9.3	14.88	0.43	4.6	9	15	0.79	----	1.48	"	110-120
6.57	7.7	11.92	0.37	4.8	8	12	0.85	----	1.45	"	"
7.05	8.0	11.95	0.32	4.0	8	12	0.91	----	1.51	"	"
7.54	4.9	7.06	0.23	4.7	5	7	0.96	----	0.88	"	100-110
8.03	4.6	6.43	0.20	4.3	5	6	1.01	----	0.82	"	90-100
8.53	3.1	4.26	0.15	4.8	3	4	1.05	----	0.51	"	"
9.01	12.3	16.50	0.53	4.3	12	17	1.11	----	1.57	"	120-130
9.58	17.1	22.26	1.00	5.8	17	22	1.19	----	2.20	"	130-140
10.08	20.3	25.72	0.87	4.3	14	17	1.26	----	2.62	Silty CLAY to CLAY	"
10.56	6.2	7.79	0.35	5.6	6	8	1.28	----	1.11	CLAY	100-110
11.05	5.6	6.98	0.32	5.7	6	7	1.30	----	0.98	"	"
11.53	5.0	6.19	0.25	5.0	5	6	1.32	----	0.86	"	"
12.07	10.9	13.34	0.40	3.7	11	13	1.35	----	1.69	"	110-120
12.56	6.1	7.39	0.40	6.6	6	7	1.37	----	1.07	"	"
13.06	11.8	14.14	0.36	3.1	8	9	1.40	----	1.83	Silty CLAY to CLAY	"
13.56	7.4	8.79	0.25	3.4	7	9	1.42	----	1.32	CLAY	100-110
14.06	9.6	11.29	0.32	3.3	6	8	1.45	----	1.46	Silty CLAY to CLAY	110-120
14.56	10.6	12.33	0.39	3.7	11	12	1.47	----	1.62	CLAY	"
15.06	8.6	9.90	0.42	4.9	9	10	1.50	----	1.54	"	"
15.56	17.4	19.82	0.70	4.0	12	13	1.53	----	2.20	Silty CLAY to CLAY	120-130
16.07	22.0	24.77	1.07	4.9	22	25	1.57	----	2.80	CLAY	130-140
16.53	15.1	16.84	0.78	5.2	15	17	1.60	----	1.88	"	120-130
17.01	12.9	14.25	0.68	5.3	13	14	1.63	----	1.58	"	"
17.58	16.8	18.31	1.01	6.0	17	18	1.67	----	2.10	"	130-140
18.04	17.7	19.07	0.97	5.5	18	19	1.70	----	2.21	"	"
18.53	15.8	16.85	0.94	5.9	16	17	1.73	----	1.96	"	120-130
19.02	15.1	15.96	0.87	5.8	15	16	1.76	----	1.86	"	"
19.58	14.7	15.42	0.77	5.2	15	15	1.80	----	1.80	"	"
20.05	20.4	21.23	0.93	4.6	20	21	1.83	----	2.56	"	130-140
20.52	27.2	28.08	1.18	4.3	18	19	1.87	----	3.46	Silty CLAY to CLAY	"
21.09	19.7	20.14	1.08	5.5	20	20	1.91	----	2.45	CLAY	"
21.59	26.6	26.96	1.41	5.3	27	27	1.94	----	3.37	"	"
22.06	108.3	109.13	0.64	0.6	22	22	1.97	39	----	SAND	110-120
22.53	95.0	95.00	1.93	2.0	32	32	2.00	38	----	Silty SAND to Sandy SILT	130-140
23.08	292.5	292.32	1.70	0.6	49	49	2.03	44	----	Gravelly SAND to SAND	110-120
23.53	177.7	177.52	0.94	0.5	36	36	2.05	41	----	SAND	100-110
24.07	17.9	17.87	1.04	5.8	18	18	2.09	----	2.19	CLAY	130-140
24.58	27.7	27.63	1.10	4.0	18	18	2.13	----	3.49	Silty CLAY to CLAY	"
25.03	26.0	25.92	1.14	4.4	17	17	2.16	----	3.26	"	"
25.59	25.5	25.40	1.22	4.8	26	25	2.20	----	3.19	CLAY	"
26.06	27.5	27.37	1.40	5.1	28	27	2.23	----	3.45	"	"
26.53	18.5	18.40	1.09	5.9	19	18	2.27	----	2.25	"	"
27.00	11.8	11.73	0.56	4.7	12	12	2.30	----	1.69	"	120-130
27.56	14.1	14.01	0.57	4.0	14	14	2.33	----	1.65	"	"

PROJECT: LEVEES - STEVENS CREEK
LOCATION: Mountain View CA
PROJ. NO.: 2227E(PGE-04)
Terminated at 70.0 feet

CPT NO.: CPT-9
DATE : 09-10-2008
TIME : 13:51:50
Groundwater measured at 10.3 feet

PACIFIC GEOTECHNICAL
cpts by John Sarmiento & Associates

DEPTH (feet)	Qc (tsf)	Qc' (tsf)	Fs (tsf)	Rf (%)	SPT (N)	SPT' (N')	EffVtStr (ksf)	PHI (deg.)	SU (ksf)	SOIL BEHAVIOR TYPE	DENSITY RANGE (pcf)
28.05	12.0	11.91	0.48	4.0	12	12	2.36	----	1.37	CLAY	120-130
28.54	9.8	9.72	0.44	4.5	10	10	2.39	----	1.34	"	110-120
29.01	12.4	12.30	0.56	4.5	12	12	2.42	----	1.41	"	120-130
29.51	9.2	9.12	0.46	5.0	9	9	2.44	----	1.23	"	110-120
30.09	12.6	12.48	0.53	4.2	13	12	2.48	----	1.43	"	120-130
30.57	7.9	7.80	0.38	4.8	8	8	2.51	----	1.20	"	110-120
31.01	7.2	7.07	0.29	4.0	7	7	2.52	----	1.06	"	100-110
31.59	10.4	10.09	0.48	4.6	10	10	2.56	----	1.41	"	120-130
32.08	24.1	23.09	0.95	3.9	16	15	2.60	----	2.95	Silty CLAY to CLAY	130-140
32.55	10.3	9.78	0.48	4.7	10	10	2.62	----	1.38	CLAY	110-120
33.04	7.4	6.98	0.22	3.0	5	5	2.64	----	1.07	Silty CLAY to CLAY	100-110
33.52	8.8	8.24	0.26	3.0	6	5	2.66	----	1.35	"	"
34.00	12.6	11.67	0.58	4.6	13	12	2.69	----	1.40	CLAY	120-130
34.52	17.7	16.21	0.80	4.5	18	16	2.73	----	2.08	"	"
35.10	44.3	39.95	1.41	3.2	22	20	2.77	----	5.62	Clayey SILT to Silty CLAY	130-140
35.58	27.9	24.84	1.74	6.2	28	25	2.80	----	3.43	CLAY	"
36.04	126.2	110.94	2.85	2.3	42	37	2.84	39	----	Silty SAND to Sandy SILT	"
36.51	113.0	98.07	3.69	3.3	45	39	2.87	----	14.77	Sandy SILT to Clayey SILT	"
37.07	18.7	15.98	1.50	8.0	19	16	2.91	----	2.19	CLAY	"
37.54	9.8	8.28	0.89	9.1	10	8	2.94	----	1.25	"	120-130
38.08	11.5	9.59	0.86	7.5	12	10	2.97	----	1.52	"	"
38.55	14.0	11.54	0.90	6.4	14	12	3.00	----	1.55	"	"
39.02	14.4	11.83	0.87	6.0	14	12	3.03	----	1.60	"	"
39.58	10.0	8.17	0.59	5.9	10	8	3.07	----	1.26	"	"
40.07	14.6	11.88	0.84	5.8	15	12	3.10	----	1.62	"	"
40.55	31.7	25.67	1.59	5.0	32	26	3.13	----	3.89	"	130-140
41.01	37.4	30.14	2.12	5.7	37	30	3.17	----	4.65	"	"
41.59	30.2	24.19	1.88	6.2	30	24	3.21	----	3.68	"	"
42.06	31.7	25.27	1.88	5.9	32	25	3.24	----	3.88	"	"
42.53	29.7	23.56	1.65	5.6	30	24	3.28	----	3.61	"	"
43.09	39.2	30.91	2.28	5.8	39	31	3.32	----	4.87	"	"
43.53	51.8	40.65	3.42	6.6	52	41	3.35	----	6.54	"	"
44.07	88.4	68.98	4.10	4.6	88	69	3.39	----	11.42	Very Stiff Fine Grained *	"
44.52	172.2	133.71	5.63	3.3	69	53	3.42	----	22.59	Sandy SILT to Clayey SILT	"
45.07	78.7	60.75	4.29	5.5	79	61	3.46	----	10.12	Very Stiff Fine Grained *	"
45.52	37.7	28.96	2.08	5.5	38	29	3.49	----	4.65	CLAY	"
46.06	25.3	19.32	1.68	6.6	25	19	3.53	----	2.99	"	"
46.51	23.6	17.93	1.50	6.4	24	18	3.57	----	2.76	"	"
47.05	18.8	14.20	1.16	6.2	19	14	3.61	----	2.11	"	"
47.57	15.3	11.49	1.28	8.4	15	11	3.64	----	1.64	"	"
48.03	11.9	8.90	0.87	7.3	12	9	3.67	----	1.48	"	120-130
48.59	15.4	11.45	0.70	4.5	15	11	3.71	----	1.65	"	"
49.04	22.9	16.94	0.85	3.7	15	11	3.74	----	2.64	Silty CLAY to CLAY	130-140
49.52	26.3	19.36	1.07	4.1	18	13	3.77	----	3.09	"	"
50.07	36.4	26.62	1.78	4.9	36	27	3.81	----	4.43	CLAY	"
50.56	58.1	42.25	2.16	3.7	29	21	3.85	----	7.32	Clayey SILT to Silty CLAY	"
51.06	58.1	42.25	2.16	3.7	29	21	3.85	----	7.32	"	"
51.59	122.2	87.83	3.04	2.5	41	29	3.92	37	----	Silty SAND to Sandy SILT	"
52.03	98.7	70.57	3.48	3.5	39	28	3.96	----	12.72	Sandy SILT to Clayey SILT	"
52.55	21.2	15.07	1.18	5.6	21	15	3.99	----	2.38	CLAY	"
53.10	22.9	16.19	1.10	4.8	23	16	4.03	----	2.61	"	"
53.53	19.2	13.52	1.48	7.7	19	14	4.07	----	2.11	"	"
54.07	12.8	8.98	1.16	9.1	13	9	4.10	----	1.25	"	120-130
54.56	20.9	14.60	1.31	6.3	21	15	4.14	----	2.33	"	130-140
55.03	17.0	11.83	1.03	6.1	17	12	4.17	----	1.80	"	"

PROJECT: LEVEES - STEVENS CREEK
LOCATION: Mountain View CA
PROJ. NO.: 2227E(PGE-04)
Terminated at 70.0 feet

CPT NO.: CPT-9
DATE : 09-10-2008
TIME : 13:51:50
Groundwater measured at 10.3 feet

PACIFIC GEOTECHNICAL
cpts by John Sarmiento & Associates

DEPTH (feet)	Qc (tsf)	Qc' (tsf)	Fs (tsf)	Rf (%)	SPT (N)	SPT' (N')	EffVtStr (ksf)	PHI (deg.)	SU (ksf)	SOIL BEHAVIOR TYPE	DENSITY RANGE (pcf)
55.58	13.4	9.28	0.83	6.2	13	9	4.20	----	1.32	CLAY	120-130
56.04	15.3	10.56	1.03	6.7	15	11	4.23	----	1.57	"	"
56.60	17.5	12.02	1.16	6.6	18	12	4.27	----	1.85	"	130-140
57.06	18.6	12.72	1.19	6.4	19	13	4.31	----	2.00	"	"
57.50	16.9	11.51	1.05	6.2	17	12	4.34	----	1.77	"	"
58.08	17.9	12.13	1.05	5.9	18	12	4.38	----	1.89	"	"
58.53	19.1	12.89	1.25	6.5	19	13	4.41	----	2.05	"	"
59.08	18.1	12.15	0.96	5.3	18	12	4.45	----	1.91	"	"
59.54	16.3	10.91	0.92	5.6	16	11	4.48	----	1.67	"	120-130
60.08	16.9	11.26	0.93	5.5	17	11	4.52	----	1.74	"	"

DEPTH = Sampling interval (.1 feet)
Qc = Tip bearing resistance TotStr = Total Stress using est. density**
Fs = Sleeve friction resistance Phi = Soil friction angle*
Rf = Tip/Sleeve ratio Su = Undrained Soil Strength* (Nk=10 for Qc<9 tsf)
SPT = Equivalent Standard Penetration Test* (Nk=12 for Qc=9 to 12 tsf) (Nk=15 for Qc>12 tsf)
References: * Robertson and Campanella, 1988
** Olsen, 1989 *** Durgunoglu & Mitchell, 1975

PROJECT: LEVEES - STEVENS CREEK
LOCATION: Mountain View CA
PROJ. NO.: 2227E(PGE-04)
Terminated at 70.0 feet

CPT NO.: CPT-10
DATE : 09-08-2008
TIME : 11:00:07
Groundwater measured at 16.2 feet

PACIFIC GEOTECHNICAL
cpts by John Sarmiento & Associates

DEPTH (feet)	Qc (tsf)	Qc' (tsf)	Fs (tsf)	Rf (%)	SPT (N)	SPT' (N')	EffVtStr (ksf)	PHI (deg.)	SU (ksf)	SOIL BEHAVIOR TYPE	DENSITY RANGE (pcf)
0.54	467.2	747.52	4.91	1.1	93	150	0.06	>48	----	SAND	130-140
1.08	107.4	171.84	5.43	5.1	107	172	0.14	----	14.31	Very Stiff Fine Grained *	>140
1.56	87.6	140.16	5.62	6.4	88	140	0.21	----	11.67	"	"
2.02	58.2	93.12	3.27	5.6	58	93	0.27	----	7.74	"	130-140
2.58	55.2	88.32	3.03	5.5	55	88	0.34	----	7.34	CLAY	"
3.04	66.0	105.60	3.30	5.0	66	106	0.40	----	8.77	Very Stiff Fine Grained *	"
3.59	83.4	133.44	2.84	3.4	33	53	0.48	----	11.09	Sandy SILT to Clayey SILT	"
4.05	112.2	179.52	4.69	4.2	112	180	0.54	----	14.92	Very Stiff Fine Grained *	"
4.52	71.0	113.60	4.62	6.5	71	114	0.60	----	9.43	"	"
5.06	285.6	456.96	5.09	1.8	57	91	0.68	47	----	SAND	"
5.50	287.0	459.20	4.99	1.7	57	92	0.74	47	----	"	"
6.04	133.1	211.62	3.93	3.0	44	71	0.81	42	----	Silty SAND to Sandy SILT	"
6.57	80.6	122.32	3.80	4.7	81	122	0.88	----	10.69	Very Stiff Fine Grained *	"
7.02	40.9	59.59	2.20	5.4	41	60	0.94	----	5.39	CLAY	"
7.56	27.0	37.58	1.87	6.9	27	38	1.02	----	3.53	"	"
8.02	26.4	35.89	1.73	6.6	26	36	1.08	----	3.45	"	"
8.50	27.1	35.93	1.66	6.1	27	36	1.14	----	3.54	"	"
9.09	31.6	40.59	1.70	5.4	32	41	1.22	----	4.13	"	"
9.57	34.6	43.34	1.86	5.4	35	43	1.29	----	4.53	"	"
10.05	40.8	49.83	2.05	5.0	41	50	1.35	----	5.35	"	"
10.52	35.6	42.39	1.89	5.3	36	42	1.42	----	4.65	"	"
11.09	24.8	28.62	1.59	6.4	25	29	1.49	----	3.21	"	"
11.57	23.8	26.88	1.43	6.0	24	27	1.56	----	3.07	"	"
12.02	23.7	26.26	1.41	5.9	24	26	1.62	----	3.05	"	"
12.52	22.1	23.95	1.27	5.7	22	24	1.68	----	2.83	"	"
13.10	15.0	15.88	0.97	6.5	15	16	1.76	----	1.88	"	120-130
13.57	21.1	22.03	0.77	3.6	14	15	1.82	----	2.69	Silty CLAY to CLAY	"
14.06	17.2	17.70	0.73	4.2	17	18	1.88	----	2.17	CLAY	"
14.55	12.7	12.89	0.53	4.2	13	13	1.94	----	1.56	"	"
15.02	8.4	8.41	0.41	4.9	8	8	1.99	----	1.48	"	110-120
15.50	6.0	5.99	0.31	5.2	6	6	2.04	----	1.00	"	100-110
16.09	4.9	4.89	0.28	5.7	5	5	2.11	----	0.77	"	"
16.57	6.5	6.48	0.32	4.9	7	6	2.13	----	1.08	"	"
17.06	8.4	8.37	0.35	4.2	8	8	2.15	----	1.46	"	110-120
17.55	10.2	10.16	0.43	4.2	10	10	2.18	----	1.51	"	"
18.04	7.9	7.87	0.42	5.3	8	8	2.20	----	1.35	"	"
18.57	12.8	12.74	0.44	3.4	9	8	2.24	----	1.55	Silty CLAY to CLAY	120-130
19.05	16.8	16.71	0.60	3.6	11	11	2.27	----	2.08	"	"
19.51	19.3	19.19	0.83	4.3	19	19	2.30	----	2.41	CLAY	"
20.06	35.0	34.77	2.10	6.0	35	35	2.34	----	4.49	"	130-140
20.54	45.9	45.56	2.70	5.9	46	46	2.37	----	5.94	"	"
21.01	49.7	49.30	3.20	6.4	50	49	2.40	----	6.45	"	"
21.51	25.2	24.98	1.50	6.0	25	25	2.44	----	3.17	"	"
22.07	19.1	18.92	0.98	5.1	19	19	2.48	----	2.36	"	"
22.55	11.2	11.05	0.72	6.4	11	11	2.51	----	1.62	"	120-130
23.01	11.0	10.75	0.48	4.4	11	11	2.54	----	1.59	"	"
23.59	12.4	11.96	0.57	4.6	12	12	2.58	----	1.45	"	"
24.08	13.6	12.98	0.93	6.8	14	13	2.61	----	1.61	"	"
24.55	11.4	10.77	0.60	5.3	11	11	2.64	----	1.64	"	"
25.03	32.9	30.71	1.14	3.5	16	15	2.67	----	4.17	Clayey SILT to Silty CLAY	130-140
25.52	20.0	18.44	0.88	4.4	20	18	2.71	----	2.45	CLAY	"
26.00	18.5	16.87	0.70	3.8	12	11	2.74	----	2.24	Silty CLAY to CLAY	120-130
26.57	23.1	20.75	1.27	5.5	23	21	2.78	----	2.85	CLAY	130-140
27.03	111.9	99.28	3.34	3.0	45	40	2.81	----	14.69	Sandy SILT to Clayey SILT	"
27.53	111.9	99.28	3.34	3.0	45	40	2.81	----	14.69	"	"

PROJECT: LEVEES - STEVENS CREEK
LOCATION: Mountain View CA
PROJ. NO.: 2227E(PGE-04)
Terminated at 70.0 feet

CPT NO.: CPT-10
DATE : 09-08-2008
TIME : 11:00:07
Groundwater measured at 16.2 feet

PACIFIC GEOTECHNICAL
cpts by John Sarmiento & Associates

DEPTH (feet)	Qc (tsf)	Qc' (tsf)	Fs (tsf)	Rf (%)	SPT (N)	SPT' (N')	EffVtStr (ksf)	PHI (deg.)	SU (ksf)	SOIL BEHAVIOR TYPE	DENSITY RANGE (pcf)
28.07	152.6	131.59	3.29	2.2	51	44	2.89	40	----	Silty SAND to Sandy SILT	130-140
28.56	151.0	128.46	2.58	1.7	38	32	2.92	39	----	SAND to Silty SAND	"
29.01	210.8	177.03	2.55	1.2	42	35	2.96	41	----	SAND	"
29.56	50.6	41.83	1.27	2.5	20	17	3.00	----	6.49	Sandy SILT to Clayey SILT	"
30.04	6.1	5.02	0.41	6.7	6	5	3.02	----	0.83	CLAY	110-120
30.59	10.4	8.51	0.54	5.2	10	9	3.06	----	1.40	"	120-130
31.08	14.0	11.36	0.64	4.6	14	11	3.12	----	1.59	"	"
31.58	14.0	11.36	0.64	4.6	14	11	3.12	----	1.59	"	"
32.07	13.2	10.67	0.73	5.5	13	11	3.15	----	1.48	"	"
32.56	10.9	8.77	0.51	4.7	11	9	3.18	----	1.47	"	"
33.06	16.0	12.81	0.63	3.9	11	9	3.21	----	1.85	Silty CLAY to CLAY	"
33.54	13.3	10.61	0.46	3.5	9	7	3.24	----	1.48	"	"
34.03	28.0	22.22	1.47	5.3	28	22	3.27	----	3.44	CLAY	130-140
34.58	57.2	45.12	1.52	2.7	23	18	3.31	----	7.33	Sandy SILT to Clayey SILT	"
35.05	55.0	43.17	1.43	2.6	22	17	3.35	----	7.03	"	"
35.54	71.5	55.87	1.04	1.5	24	19	3.38	35	----	Silty SAND to Sandy SILT	120-130
36.00	27.9	21.69	1.13	4.1	19	14	3.41	----	3.41	Silty CLAY to CLAY	130-140
36.58	22.8	17.62	1.21	5.3	23	18	3.46	----	2.72	CLAY	"
37.04	111.5	85.78	1.22	1.1	28	21	3.48	37	----	SAND to Silty SAND	120-130
37.53	124.3	95.19	1.38	1.1	31	24	3.51	38	----	"	"
38.00	126.8	96.60	3.90	3.1	51	39	3.55	----	16.58	Sandy SILT to Clayey SILT	130-140
38.56	138.9	105.18	3.72	2.7	46	35	3.59	38	----	Silty SAND to Sandy SILT	"
39.00	261.0	196.66	3.37	1.3	52	39	3.62	42	----	SAND	"
39.52	250.2	187.59	2.49	1.0	50	38	3.65	42	----	"	120-130
40.06	177.4	132.43	0.95	0.5	35	26	3.68	40	----	"	110-120
40.59	87.5	64.93	1.74	2.0	29	22	3.72	36	----	Silty SAND to Sandy SILT	130-140
41.04	101.7	75.08	1.73	1.7	34	25	3.75	36	----	"	"
41.59	71.0	52.10	1.65	2.3	24	17	3.79	34	----	"	"
42.06	14.9	10.88	0.89	6.0	15	11	3.82	----	1.62	CLAY	120-130
42.52	10.3	7.49	0.60	5.8	10	7	3.85	----	1.26	"	"
43.00	12.6	9.12	0.64	5.1	13	9	3.88	----	1.31	"	"
43.51	19.3	13.89	0.73	3.8	13	9	3.91	----	2.20	Silty CLAY to CLAY	"
44.00	19.6	14.04	0.75	3.8	13	9	3.94	----	2.23	"	"
44.59	14.8	10.54	0.63	4.3	15	11	3.98	----	1.59	CLAY	"
45.08	55.3	39.18	1.75	3.2	22	16	4.02	----	6.98	Sandy SILT to Clayey SILT	130-140
45.56	10.7	7.55	0.56	5.2	11	8	4.05	----	1.29	CLAY	120-130
46.04	10.9	7.67	0.46	4.2	11	8	4.08	----	1.32	"	"
46.53	16.3	11.42	0.55	3.4	11	8	4.11	----	1.77	Silty CLAY to CLAY	"
47.01	21.6	15.07	0.83	3.8	14	10	4.14	----	2.48	"	130-140
47.58	25.2	17.50	0.83	3.3	13	9	4.18	----	2.95	Clayey SILT to Silty CLAY	"
48.08	14.2	9.82	0.56	3.9	14	10	4.22	----	1.48	CLAY	120-130
48.56	17.6	12.13	0.80	4.5	18	12	4.25	----	1.93	"	"
49.05	18.2	12.49	0.96	5.3	18	12	4.28	----	2.00	"	130-140
49.52	18.3	12.51	0.88	4.8	18	13	4.31	----	2.01	"	120-130
50.01	17.7	12.05	0.75	4.2	18	12	4.34	----	1.93	"	"
50.51	15.7	10.65	0.71	4.5	16	11	4.37	----	1.66	"	"
51.09	16.4	11.07	0.59	3.6	11	7	4.41	----	1.75	Silty CLAY to CLAY	"
51.57	14.9	10.02	0.56	3.8	10	7	4.44	----	1.54	"	"
52.06	12.8	8.58	0.47	3.7	9	6	4.47	----	1.26	"	"
52.54	11.1	7.41	0.39	3.5	7	5	4.49	----	1.29	"	110-120
53.02	12.0	7.99	0.38	3.2	8	5	4.52	----	1.15	"	"
53.53	14.9	9.88	0.46	3.1	7	5	4.55	----	1.53	Clayey SILT to Silty CLAY	120-130
54.01	14.1	9.31	0.44	3.1	9	6	4.58	----	1.42	Silty CLAY to CLAY	"
54.60	12.8	8.41	0.47	3.7	9	6	4.62	----	1.24	"	"
55.07	15.3	10.02	0.44	2.9	8	5	4.65	----	1.57	Clayey SILT to Silty CLAY	"

PROJECT: LEVEES - STEVENS CREEK
LOCATION: Mountain View CA
PROJ. NO.: 2227E(PGE-04)
Terminated at 70.0 feet

CPT NO.: CPT-10
DATE : 09-08-2008
TIME : 11:00:07
Groundwater measured at 16.2 feet

PACIFIC GEOTECHNICAL
cpts by John Sarmiento & Associates

DEPTH (feet)	Qc (tsf)	Qc' (tsf)	Fs (tsf)	Rf (%)	SPT (N)	SPT' (N')	EffVtStr (ksf)	PHI (deg.)	SU (ksf)	SOIL BEHAVIOR TYPE	DENSITY RANGE (pcf)
55.56	13.1	8.55	0.47	3.6	9	6	4.68	----	1.27	Silty CLAY to CLAY	120-130
56.04	13.5	8.77	0.49	3.6	9	6	4.71	----	1.32	"	"
56.53	22.7	14.68	0.88	3.9	15	10	4.74	----	2.54	"	130-140
57.09	35.6	22.90	1.66	4.7	24	15	4.78	----	4.26	"	"
57.58	27.0	17.29	1.36	5.0	27	17	4.82	----	3.11	CLAY	"
58.05	25.4	16.19	1.25	4.9	25	16	4.86	----	2.89	"	"
58.53	28.7	18.21	1.23	4.3	19	12	4.89	----	3.32	Silty CLAY to CLAY	"
59.01	33.5	21.15	1.35	4.0	22	14	4.92	----	3.96	"	"
59.58	43.1	27.06	1.95	4.5	29	18	4.97	----	5.23	"	"
60.06	41.3	25.81	1.94	4.7	28	17	5.00	----	4.99	"	"
60.53	32.9	20.49	1.44	4.4	22	14	5.03	----	3.87	"	"
61.01	33.2	20.60	1.60	4.8	33	21	5.07	----	3.90	CLAY	"
61.57	24.7	15.26	1.33	5.4	25	15	5.11	----	2.76	"	"
62.05	17.9	11.02	0.87	4.9	18	11	5.14	----	1.85	"	120-130
62.52	17.8	10.93	0.73	4.1	12	7	5.17	----	1.84	Silty CLAY to CLAY	"
63.09	18.5	11.32	0.85	4.6	19	11	5.21	----	1.92	CLAY	"
63.54	18.9	11.53	0.83	4.4	19	12	5.23	----	1.97	"	"
64.02	22.0	13.37	0.86	3.9	15	9	5.27	----	2.38	Silty CLAY to CLAY	130-140
64.59	21.0	12.70	1.02	4.9	21	13	5.31	----	2.24	CLAY	"
65.06	19.3	11.63	1.18	6.1	19	12	5.34	----	2.01	"	"
65.52	79.5	47.74	2.20	2.8	32	19	5.38	----	10.04	Sandy SILT to Clayey SILT	"
66.09	46.2	27.62	2.41	5.2	46	28	5.42	----	5.59	CLAY	"
66.59	40.7	24.23	2.48	6.1	41	24	5.45	----	4.85	"	"
67.05	34.0	20.17	2.10	6.2	34	20	5.49	----	3.96	"	"
67.51	24.8	14.66	1.60	6.5	25	15	5.52	----	2.72	"	"
68.07	19.0	11.18	1.03	5.4	19	11	5.56	----	1.95	"	"
68.53	16.6	9.74	0.74	4.5	17	10	5.59	----	1.62	"	120-130
69.09	16.3	9.52	0.72	4.4	16	10	5.63	----	1.58	"	"
69.59	16.3	9.52	0.72	4.4	16	10	5.63	----	1.58	"	"
70.05	17.0	9.87	0.65	3.8	11	7	5.69	----	1.66	Silty CLAY to CLAY	"

DEPTH = Sampling interval (.1 feet)
Qc = Tip bearing resistance TotStr = Total Stress using est. density**
Fs = Sleeve friction resistance Phi = Soil friction angle*
Rf = Tip/Sleeve ratio Su = Undrained Soil Strength* (Nk=10 for Qc<9 tsf)
SPT = Equivalent Standard Penetration Test* (Nk=12 for Qc=9 to 12 tsf) (Nk=15 for Qc>12 tsf)
References: * Robertson and Campanella, 1988
** Olsen, 1989 *** Durgunoglu & Mitchell, 1975

PROJECT: LEVEES - STEVENS CREEK
LOCATION: Mountain View CA
PROJ. NO.: 2227E(PGE-04)
Terminated at 70.0 feet

CPT NO.: CPT-11
DATE : 09-08-2008
TIME : 12:17:34
Groundwater measured at 9.6 feet

PACIFIC GEOTECHNICAL
cpts by John Sarmiento & Associates

DEPTH (feet)	Qc (tsf)	Qc' (tsf)	Fs (tsf)	Rf (%)	SPT (N)	SPT' (N')	EffVtStr (ksf)	PHI (deg.)	SU (ksf)	SOIL BEHAVIOR TYPE	DENSITY RANGE (pcf)
0.52	514.0	822.40	5.82	1.1	103	164	0.06	>48	----	SAND	130-140
1.02	265.8	425.28	7.96	3.0	133	213	0.13	46	----	SAND to Clayey SAND *	>140
1.56	175.4	280.64	3.93	2.2	58	94	0.20	44	----	Silty SAND to Sandy SILT	130-140
2.02	100.6	160.96	4.31	4.3	101	161	0.26	----	13.40	Very Stiff Fine Grained *	"
2.55	66.0	105.60	2.92	4.4	33	53	0.34	----	8.78	Clayey SILT to Silty CLAY	"
3.03	44.1	70.56	2.10	4.8	29	47	0.40	----	5.85	Silty CLAY to CLAY	"
3.54	32.6	52.16	2.00	6.1	33	52	0.47	----	4.32	CLAY	"
4.01	36.9	59.04	2.30	6.2	37	59	0.53	----	4.88	"	"
4.56	44.5	71.20	2.63	5.9	45	71	0.61	----	5.89	"	"
5.04	38.4	61.44	2.25	5.9	38	61	0.67	----	5.08	"	"
5.51	52.0	83.20	2.24	4.3	26	42	0.74	----	6.88	Clayey SILT to Silty CLAY	"
6.07	40.1	63.69	1.90	4.7	27	42	0.81	----	5.29	Silty CLAY to CLAY	"
6.56	31.9	48.55	1.68	5.3	32	49	0.88	----	4.19	CLAY	"
7.05	25.9	37.71	1.53	5.9	26	38	0.94	----	3.39	"	"
7.54	20.9	29.15	1.27	6.1	21	29	1.01	----	2.72	"	"
8.04	21.7	29.51	1.18	5.4	22	30	1.08	----	2.82	"	"
8.54	21.0	27.81	0.97	4.6	21	28	1.15	----	2.72	"	"
9.00	21.9	28.29	0.92	4.2	15	19	1.21	----	2.84	Silty CLAY to CLAY	"
9.51	13.7	17.26	0.65	4.7	14	17	1.27	----	1.74	CLAY	120-130
10.01	14.7	18.08	0.55	3.7	10	12	1.33	----	1.87	Silty CLAY to CLAY	"
10.52	13.7	16.43	0.51	3.7	9	11	1.40	----	1.73	"	"
11.03	13.5	15.78	0.56	4.1	14	16	1.46	----	1.70	CLAY	"
11.53	14.3	16.33	0.58	4.1	14	16	1.52	----	1.81	"	"
12.03	16.1	18.01	0.59	3.7	11	12	1.59	----	2.04	Silty CLAY to CLAY	"
12.54	14.4	15.78	0.57	4.0	14	16	1.65	----	1.81	CLAY	"
13.04	11.3	12.13	0.47	4.2	11	12	1.71	----	1.74	"	"
13.55	11.2	11.80	0.51	4.6	11	12	1.78	----	1.72	"	"
14.06	7.2	7.49	0.36	5.0	7	7	1.83	----	1.26	"	110-120
14.50	7.0	7.19	0.34	4.9	7	7	1.89	----	1.21	"	"
15.04	6.1	6.18	0.35	5.7	6	6	1.94	----	1.03	"	100-110
15.52	6.4	6.45	0.36	5.6	6	6	1.97	----	1.08	"	110-120
16.06	10.6	10.61	0.45	4.2	11	11	2.00	----	1.60	"	"
16.53	9.4	9.40	0.38	4.0	9	9	2.02	----	1.39	"	"
17.08	9.4	9.39	0.51	5.4	9	9	2.05	----	1.39	"	"
17.54	11.3	11.28	0.50	4.4	11	11	2.08	----	1.70	"	120-130
18.00	6.9	6.89	0.30	4.3	7	7	2.10	----	1.15	"	100-110
18.51	7.8	7.78	0.27	3.5	8	8	2.12	----	1.33	"	"
19.04	6.7	6.68	0.22	3.3	7	7	2.14	----	1.10	"	"
19.50	7.7	7.68	0.28	3.6	8	8	2.16	----	1.30	"	"
20.04	15.3	15.24	0.47	3.1	8	8	2.20	----	1.87	Clayey SILT to Silty CLAY	120-130
20.51	10.1	10.06	0.30	3.0	7	7	2.22	----	1.47	Silty CLAY to CLAY	110-120
21.05	9.3	9.25	0.26	2.8	6	6	2.24	----	1.33	"	100-110
21.51	6.7	6.66	0.20	3.0	7	7	2.26	----	1.07	CLAY	"
22.03	10.7	10.64	0.38	3.6	7	7	2.29	----	1.56	Silty CLAY to CLAY	110-120
22.57	11.7	11.62	0.47	4.0	12	12	2.32	----	1.72	CLAY	120-130
23.03	15.4	15.29	0.44	2.9	8	8	2.35	----	1.86	Clayey SILT to Silty CLAY	"
23.56	19.1	18.95	0.69	3.6	13	13	2.39	----	2.35	Silty CLAY to CLAY	"
24.02	26.6	26.38	0.98	3.7	13	13	2.42	----	3.35	Clayey SILT to Silty CLAY	130-140
24.54	28.8	28.54	1.15	4.0	19	19	2.46	----	3.64	Silty CLAY to CLAY	"
25.06	28.4	28.12	1.06	3.7	14	14	2.50	----	3.58	Clayey SILT to Silty CLAY	"
25.51	28.0	27.46	1.09	3.9	19	18	2.53	----	3.52	Silty CLAY to CLAY	"
26.04	19.2	18.59	0.95	4.9	19	19	2.57	----	2.34	CLAY	"
26.50	56.5	54.07	1.62	2.9	23	22	2.60	----	7.31	Sandy SILT to Clayey SILT	"
27.02	183.4	173.26	2.36	1.3	37	35	2.64	41	----	SAND	"
27.51	289.9	270.45	5.13	1.8	58	54	2.67	44	----	"	"

PROJECT: LEVEES - STEVENS CREEK
LOCATION: Mountain View CA
PROJ. NO.: 2227E(PGE-04)
Terminated at 70.0 feet

CPT NO.: CPT-11
DATE : 09-08-2008
TIME : 12:17:34
Groundwater measured at 9.6 feet

PACIFIC GEOTECHNICAL
cpts by John Sarmiento & Associates

DEPTH (feet)	Qc (tsf)	Qc' (tsf)	Fs (tsf)	Rf (%)	SPT (N)	SPT' (N')	EffVtStr (ksf)	PHI (deg.)	SU (ksf)	SOIL BEHAVIOR TYPE	DENSITY RANGE (pcf)
28.03	358.5	331.19	2.16	0.6	60	55	2.70	45	----	Gravelly SAND to SAND	110-120
28.56	330.4	302.17	2.01	0.6	55	50	2.73	44	----	"	"
29.03	272.0	246.99	1.38	0.5	45	41	2.75	43	----	"	100-110
29.54	342.5	308.56	1.29	0.4	57	51	2.77	44	----	"	"
30.05	277.8	248.27	1.20	0.4	46	41	2.79	43	----	"	"
30.52	176.8	155.99	2.83	1.6	44	39	2.83	41	----	SAND to Silty SAND	130-140
31.00	145.1	126.37	2.91	2.0	48	42	2.86	39	----	Silty SAND to Sandy SILT	"
31.51	264.9	227.45	3.86	1.5	53	45	2.90	43	----	SAND	"
32.06	30.4	25.70	1.77	5.8	30	26	2.94	----	3.79	CLAY	"
32.53	121.6	101.43	4.29	3.5	49	41	2.97	----	15.94	Sandy SILT to Clayey SILT	"
33.01	25.9	21.35	2.34	9.0	26	21	3.01	----	3.18	CLAY	"
33.56	41.7	34.18	3.32	8.0	42	34	3.05	----	5.28	"	"
34.07	15.3	12.48	0.94	6.1	15	12	3.08	----	1.76	"	120-130
34.50	13.8	11.22	0.55	4.0	14	11	3.11	----	1.55	"	"
35.02	15.8	12.78	0.67	4.2	16	13	3.14	----	1.81	"	"
35.54	15.6	12.56	0.81	5.2	16	13	3.17	----	1.78	"	"
36.07	12.5	10.02	0.67	5.4	13	10	3.20	----	1.37	"	"
36.53	14.2	11.34	0.65	4.6	14	11	3.23	----	1.59	"	"
37.06	15.6	12.39	0.63	4.0	10	8	3.27	----	1.77	Silty CLAY to CLAY	"
37.52	13.7	10.84	0.53	3.9	9	7	3.29	----	1.51	"	"
38.01	11.9	9.37	0.50	4.2	12	9	3.33	----	1.59	CLAY	"
38.55	17.3	13.56	0.46	2.7	9	7	3.36	----	1.98	Clayey SILT to Silty CLAY	"
39.01	9.2	7.18	0.29	3.2	6	5	3.38	----	1.13	Silty CLAY to CLAY	110-120
39.54	14.2	11.04	0.42	3.0	7	6	3.42	----	1.56	Clayey SILT to Silty CLAY	120-130
40.06	8.8	6.81	0.30	3.4	9	7	3.44	----	1.26	CLAY	110-120
40.52	9.5	7.33	0.33	3.5	10	7	3.47	----	1.16	"	"
41.06	12.5	9.59	0.52	4.2	13	10	3.50	----	1.33	"	120-130
41.51	21.7	16.58	0.78	3.6	14	11	3.53	----	2.55	Silty CLAY to CLAY	"
42.04	20.0	15.21	0.73	3.7	13	10	3.56	----	2.32	"	"
42.56	13.1	9.91	0.46	3.5	9	7	3.60	----	1.39	"	"
43.01	12.7	9.57	0.41	3.2	8	6	3.62	----	1.34	"	"
43.55	16.2	12.14	0.55	3.4	11	8	3.66	----	1.80	"	"
44.08	17.2	12.82	0.52	3.0	9	6	3.69	----	1.93	Clayey SILT to Silty CLAY	"
44.53	15.3	11.36	0.54	3.5	10	8	3.72	----	1.67	Silty CLAY to CLAY	"
45.06	34.2	25.24	1.25	3.7	17	13	3.76	----	4.18	Clayey SILT to Silty CLAY	130-140
45.51	25.3	18.57	1.03	4.1	17	12	3.79	----	2.99	Silty CLAY to CLAY	"
46.04	22.9	16.71	1.12	4.9	23	17	3.83	----	2.67	CLAY	"
46.56	11.9	8.64	0.48	4.0	12	9	3.86	----	1.50	"	120-130
47.00	65.7	47.45	1.10	1.7	22	16	3.89	34	----	Silty SAND to Sandy SILT	130-140
47.54	98.6	70.77	2.48	2.5	33	24	3.93	36	----	"	"
48.06	73.2	52.22	2.32	3.2	29	21	3.97	----	9.36	Sandy SILT to Clayey SILT	"
48.50	20.9	14.84	1.21	5.8	21	15	4.00	----	2.38	CLAY	"
49.02	21.3	15.05	0.87	4.1	14	10	4.04	----	2.43	Silty CLAY to CLAY	"
49.53	15.8	11.12	0.55	3.5	11	7	4.07	----	1.69	"	120-130
50.04	51.3	35.95	3.32	6.5	51	36	4.11	----	6.42	CLAY	130-140
50.57	300.2	209.79	1.06	0.4	50	35	4.13	42	----	Gravelly SAND to SAND	100-110
51.05	70.7	49.20	3.94	5.6	71	49	4.17	----	9.00	Very Stiff Fine Grained *	130-140
51.56	225.2	156.00	4.45	2.0	56	39	4.20	41	----	SAND to Silty SAND	"
52.02	397.1	274.11	3.77	0.9	79	55	4.23	44	----	SAND	120-130
52.53	511.4	351.63	5.61	1.1	102	70	4.26	45	----	"	"
53.02	528.7	362.13	5.00	0.9	88	60	4.29	45	----	Gravelly SAND to SAND	"
53.56	96.6	65.85	3.98	4.1	48	33	4.33	----	12.43	Clayey SILT to Silty CLAY	130-140
54.03	129.8	88.10	4.13	3.2	52	35	4.37	----	16.85	Sandy SILT to Clayey SILT	"
54.57	137.1	92.60	4.83	3.5	55	37	4.41	----	17.82	"	"
55.06	35.0	23.53	2.00	5.7	35	24	4.44	----	4.20	CLAY	"

PROJECT: LEVEES - STEVENS CREEK
LOCATION: Mountain View CA
PROJ. NO.: 2227E(PGE-04)
Terminated at 70.0 feet

CPT NO.: CPT-11
DATE : 09-08-2008
TIME : 12:17:34
Groundwater measured at 9.6 feet

PACIFIC GEOTECHNICAL
cpts by John Sarmiento & Associates

DEPTH (feet)	Qc (tsf)	Qc' (tsf)	Fs (tsf)	Rf (%)	SPT (N)	SPT' (N')	EffVtStr (ksf)	PHI (deg.)	SU (ksf)	SOIL BEHAVIOR TYPE	DENSITY RANGE (pcf)
55.56	117.9	78.91	3.91	3.3	47	32	4.48	----	15.25	Sandy SILT to Clayey SILT	130-140
56.08	82.4	54.88	1.58	1.9	27	18	4.52	35	----	Silty SAND to Sandy SILT	"
56.54	20.0	13.27	0.69	3.5	10	7	4.55	----	2.19	Clayey SILT to Silty CLAY	120-130
57.01	20.0	13.22	0.66	3.3	10	7	4.58	----	2.19	"	"
57.52	18.7	12.31	0.54	2.9	9	6	4.61	----	2.01	"	"
58.08	18.8	12.32	0.57	3.0	9	6	4.64	----	2.02	"	"
58.56	18.9	12.34	0.63	3.3	9	6	4.67	----	2.03	"	"
59.04	17.2	11.19	0.58	3.4	11	7	4.70	----	1.80	Silty CLAY to CLAY	"
59.53	16.9	10.95	0.61	3.6	11	7	4.73	----	1.75	"	"
60.01	18.0	11.61	0.67	3.7	12	8	4.76	----	1.90	"	"
60.55	16.1	10.34	0.58	3.6	11	7	4.80	----	1.64	"	"
61.02	18.2	11.64	0.63	3.5	12	8	4.83	----	1.91	"	"
61.58	22.1	14.06	0.89	4.0	15	9	4.87	----	2.43	"	130-140
62.06	26.2	16.59	1.20	4.6	26	17	4.90	----	2.97	CLAY	"
62.53	26.3	16.58	1.21	4.6	26	17	4.94	----	2.98	"	"
63.00	24.6	15.44	1.29	5.2	25	15	4.97	----	2.75	"	"
63.56	23.9	14.92	1.29	5.4	24	15	5.01	----	2.65	"	"
64.05	20.1	12.50	1.07	5.3	20	13	5.05	----	2.14	"	"
64.53	18.2	11.29	0.90	4.9	18	11	5.08	----	1.88	"	120-130
65.07	18.6	11.49	0.92	4.9	19	11	5.12	----	1.93	"	130-140
65.55	15.8	9.73	0.75	4.7	16	10	5.15	----	1.55	"	120-130
66.01	16.6	10.19	0.76	4.6	17	10	5.17	----	1.66	"	"
66.56	16.9	10.33	0.81	4.8	17	10	5.21	----	1.69	"	"
67.01	18.0	10.97	0.86	4.8	18	11	5.24	----	1.83	"	"
67.56	18.0	10.93	0.89	4.9	18	11	5.27	----	1.83	"	"
68.03	17.6	10.66	0.89	5.1	18	11	5.30	----	1.77	"	"
68.58	19.2	11.58	1.02	5.3	19	12	5.34	----	1.98	"	130-140
69.02	20.5	12.32	1.13	5.5	21	12	5.37	----	2.15	"	"
69.55	19.7	11.79	0.97	4.9	20	12	5.41	----	2.04	"	"
70.05	17.6	10.49	0.65	3.7	12	7	5.44	----	1.76	Silty CLAY to CLAY	120-130

DEPTH = Sampling interval (.1 feet)
Qc = Tip bearing resistance   TotStr = Total Stress using est. density**
Fs = Sleeve friction resistance   Phi = Soil friction angle*
Rf = Tip/Sleeve ratio   Su = Undrained Soil Strength* (Nk=10 for Qc<9 tsf)
SPT = Equivalent Standard Penetration Test* (Nk=12 for Qc=9 to 12 tsf) (Nk=15 for Qc>12 tsf)
References: * Robertson and Campanella, 1988
** Olsen, 1989 *** Durgunoglu & Mitchell, 1975

PROJECT: LEVEES - STEVENS CREEK
LOCATION: Mountain View CA
PROJ. NO.: 2227E(PGE-04)
Terminated at 70.0 feet

CPT NO.: CPT-12
DATE : 09-08-2008
TIME : 12:37:11
Groundwater measured at 15.2 feet

PACIFIC GEOTECHNICAL
cpts by John Sarmiento & Associates

DEPTH (feet)	Qc (tsf)	Qc' (tsf)	Fs (tsf)	Rf (%)	SPT (N)	SPT' (N')	EffVtStr (ksf)	PHI (deg.)	SU (ksf)	SOIL BEHAVIOR TYPE	DENSITY RANGE (pcf)
0.53	78.1	124.96	3.19	4.1	39	62	0.06	----	10.41	Clayey SILT to Silty CLAY	130-140
1.07	90.7	145.12	3.55	3.9	45	73	0.13	----	12.08	"	"
1.55	95.2	152.32	5.25	5.5	95	152	0.20	----	12.68	Very Stiff Fine Grained *	>140
2.03	73.9	118.24	3.29	4.5	37	59	0.27	----	9.84	Clayey SILT to Silty CLAY	130-140
2.51	40.5	64.80	2.40	5.9	41	65	0.33	----	5.38	CLAY	"
3.02	45.0	72.00	1.80	4.0	23	36	0.40	----	5.97	Clayey SILT to Silty CLAY	"
3.51	51.8	82.88	2.05	4.0	26	41	0.47	----	6.88	"	"
4.01	43.1	68.96	2.49	5.8	43	69	0.53	----	5.71	CLAY	"
4.55	62.1	99.36	2.16	3.5	31	50	0.61	----	8.24	Clayey SILT to Silty CLAY	"
5.08	32.2	51.52	2.25	7.0	32	52	0.68	----	4.25	CLAY	"
5.55	21.7	34.72	1.33	6.1	22	35	0.74	----	2.84	"	"
6.09	21.9	34.74	1.28	5.8	22	35	0.81	----	2.87	"	"
6.53	23.4	35.69	1.36	5.8	23	36	0.87	----	3.06	"	"
7.00	27.8	40.65	1.29	4.6	28	41	0.94	----	3.64	"	"
7.55	23.4	32.61	1.54	6.6	23	33	1.01	----	3.05	"	"
8.02	43.2	58.79	1.52	3.5	22	29	1.08	----	5.69	Clayey SILT to Silty CLAY	"
8.57	24.0	31.74	1.34	5.6	24	32	1.15	----	3.12	CLAY	"
9.07	26.0	33.48	1.31	5.0	26	33	1.22	----	3.39	"	"
9.53	27.9	35.04	1.13	4.1	19	23	1.28	----	3.63	Silty CLAY to CLAY	"
10.09	18.1	22.13	0.90	5.0	18	22	1.35	----	2.32	CLAY	120-130
10.55	19.0	22.71	0.80	4.2	13	15	1.41	----	2.44	Silty CLAY to CLAY	"
11.02	18.6	21.70	0.90	4.8	19	22	1.47	----	2.38	CLAY	"
11.58	18.4	20.93	0.82	4.5	18	21	1.54	----	2.35	"	"
12.08	19.0	21.15	0.93	4.9	19	21	1.60	----	2.43	"	130-140
12.55	27.0	29.43	1.20	4.4	18	20	1.67	----	3.49	Silty CLAY to CLAY	"
13.03	23.4	24.97	0.98	4.2	16	17	1.73	----	3.00	"	"
13.58	16.9	17.71	0.80	4.7	17	18	1.80	----	2.13	CLAY	120-130
14.04	9.3	9.63	0.50	5.4	9	10	1.85	----	1.40	"	110-120
14.52	6.8	6.95	0.43	6.3	7	7	1.91	----	1.17	"	"
15.01	7.8	7.80	0.43	5.5	8	8	2.03	----	1.36	"	"
15.60	7.8	7.80	0.43	5.5	8	8	2.03	----	1.36	"	"
16.07	10.8	10.78	0.51	4.7	11	11	2.09	----	1.63	"	120-130
16.53	12.1	12.07	0.54	4.5	12	12	2.12	----	1.47	"	"
17.09	9.9	9.87	0.68	6.9	10	10	2.15	----	1.47	"	"
17.56	9.1	9.07	0.45	4.9	9	9	2.18	----	1.33	"	110-120
18.03	9.8	9.76	0.42	4.3	10	10	2.20	----	1.44	"	"
18.58	11.5	11.45	0.46	4.0	12	11	2.24	----	1.72	"	120-130
19.06	10.5	10.44	0.33	3.1	7	7	2.26	----	1.55	Silty CLAY to CLAY	110-120
19.52	11.6	11.53	0.42	3.6	8	8	2.29	----	1.72	"	"
20.09	14.6	14.51	0.58	4.0	15	15	2.32	----	1.78	CLAY	120-130
20.56	18.5	18.37	0.63	3.4	12	12	2.35	----	2.29	Silty CLAY to CLAY	"
21.02	21.3	21.14	0.75	3.5	11	11	2.38	----	2.66	Clayey SILT to Silty CLAY	"
21.58	12.3	12.20	0.56	4.6	12	12	2.42	----	1.46	CLAY	"
22.04	9.6	9.52	0.32	3.3	6	6	2.44	----	1.37	Silty CLAY to CLAY	110-120
22.51	8.3	8.22	0.40	4.8	8	8	2.47	----	1.37	CLAY	"
23.06	9.0	8.91	0.38	4.2	9	9	2.49	----	1.26	"	"
23.52	13.8	13.55	0.45	3.3	9	9	2.52	----	1.64	Silty CLAY to CLAY	120-130
24.08	9.9	9.63	0.33	3.3	7	6	2.55	----	1.40	"	110-120
24.55	7.4	7.15	0.28	3.8	7	7	2.57	----	1.17	CLAY	100-110
25.05	10.9	10.43	0.42	3.9	11	10	2.60	----	1.55	"	110-120
25.51	15.7	14.88	0.67	4.3	16	15	2.63	----	1.88	"	120-130
26.07	22.5	21.02	1.04	4.6	23	21	2.67	----	2.78	"	130-140
26.54	28.6	26.40	1.26	4.4	19	18	2.70	----	3.59	Silty CLAY to CLAY	"
27.01	23.0	20.97	1.34	5.8	23	21	2.74	----	2.84	CLAY	"
27.55	40.2	36.13	1.64	4.1	20	18	2.78	----	5.13	Clayey SILT to Silty CLAY	"

PROJECT: LEVEES - STEVENS CREEK
LOCATION: Mountain View CA
PROJ. NO.: 2227E(PGE-04)
Terminated at 70.0 feet

CPT NO.: CPT-12
DATE : 09-08-2008
TIME : 12:37:11
Groundwater measured at 15.2 feet

PACIFIC GEOTECHNICAL
cpts by John Sarmiento & Associates

DEPTH (feet)	Qc (tsf)	Qc' (tsf)	Fs (tsf)	Rf (%)	SPT (N)	SPT' (N')	EffVtStr (ksf)	PHI (deg.)	SU (ksf)	SOIL BEHAVIOR TYPE	DENSITY RANGE (pcf)
28.08	14.4	12.79	0.84	5.8	14	13	2.81	----	1.68	CLAY	120-130
28.54	46.7	40.95	1.26	2.7	19	16	2.84	----	5.99	Sandy SILT to Clayey SILT	130-140
29.10	20.5	17.74	0.75	3.7	14	12	2.88	----	2.49	Silty CLAY to CLAY	120-130
29.56	19.7	16.86	0.78	4.0	13	11	2.91	----	2.38	"	"
30.00	19.3	16.34	0.73	3.8	13	11	2.93	----	2.32	"	"
30.56	12.6	10.52	0.46	3.7	8	7	2.97	----	1.42	"	"
31.02	8.8	7.28	0.42	4.8	9	7	2.99	----	1.37	CLAY	110-120
31.53	7.8	6.42	0.44	5.6	8	6	3.02	----	1.16	"	"
32.09	8.6	7.05	0.31	3.6	9	7	3.05	----	1.32	"	"
32.56	12.3	10.04	0.56	4.6	12	10	3.08	----	1.37	"	120-130
33.02	11.0	8.94	0.43	3.9	11	9	3.10	----	1.49	"	110-120
33.58	19.3	15.62	0.56	2.9	10	8	3.14	----	2.29	Clayey SILT to Silty CLAY	120-130
34.05	11.9	9.59	0.46	3.9	12	10	3.17	----	1.63	CLAY	"
34.55	8.8	7.06	0.39	4.4	9	7	3.19	----	1.33	"	110-120
35.02	9.4	7.52	0.46	4.9	9	8	3.22	----	1.20	"	"
35.57	8.6	6.85	0.35	4.1	9	7	3.25	----	1.27	"	"
36.03	8.1	6.43	0.33	4.1	8	6	3.27	----	1.17	"	"
36.58	10.6	8.38	0.44	4.2	11	8	3.30	----	1.38	"	"
37.05	24.9	19.58	0.80	3.2	12	10	3.34	----	3.01	Clayey SILT to Silty CLAY	130-140
37.50	23.3	18.24	0.92	3.9	16	12	3.37	----	2.79	Silty CLAY to CLAY	"
38.10	11.5	8.95	0.45	3.9	12	9	3.40	----	1.52	CLAY	120-130
38.55	14.5	11.24	0.48	3.3	10	7	3.43	----	1.61	Silty CLAY to CLAY	"
39.02	11.9	9.18	0.47	3.9	12	9	3.46	----	1.58	CLAY	"
39.57	10.3	7.91	0.34	3.3	7	5	3.49	----	1.30	Silty CLAY to CLAY	110-120
40.04	13.3	10.18	0.42	3.2	9	7	3.52	----	1.44	"	120-130
40.59	11.0	8.38	0.44	4.0	11	8	3.55	----	1.41	CLAY	110-120
41.07	14.9	11.30	0.52	3.5	10	8	3.58	----	1.64	Silty CLAY to CLAY	120-130
41.53	18.1	13.66	0.91	5.0	18	14	3.61	----	2.07	CLAY	"
42.08	60.4	45.32	2.72	4.5	40	30	3.65	----	7.70	Silty CLAY to CLAY	130-140
42.52	223.3	167.08	0.94	0.4	45	33	3.67	41	----	SAND	100-110
43.06	58.2	43.28	1.07	1.8	19	14	3.71	33	----	Silty SAND to Sandy SILT	130-140
43.53	18.7	13.84	0.35	1.9	7	6	3.74	----	2.13	Sandy SILT to Clayey SILT	120-130
44.07	12.2	8.99	0.41	3.4	8	6	3.76	----	1.26	Silty CLAY to CLAY	110-120
44.50	12.1	8.89	0.34	2.8	8	6	3.79	----	1.24	"	"
45.05	14.1	10.30	0.45	3.2	9	7	3.82	----	1.50	"	120-130
45.52	13.3	9.67	0.50	3.8	9	6	3.85	----	1.39	"	"
46.07	12.8	9.26	0.40	3.1	9	6	3.88	----	1.32	"	110-120
46.55	10.7	7.71	0.32	3.0	7	5	3.91	----	1.30	"	"
47.01	11.4	8.19	0.29	2.5	6	4	3.93	----	1.41	Clayey SILT to Silty CLAY	"
47.53	14.3	10.22	0.37	2.6	7	5	3.96	----	1.51	"	120-130
48.08	12.7	9.03	0.29	2.3	6	5	3.99	----	1.29	"	110-120
48.54	14.1	9.99	0.43	3.0	9	7	4.02	----	1.48	Silty CLAY to CLAY	120-130
49.01	14.9	10.52	0.55	3.7	10	7	4.05	----	1.58	"	"
49.56	15.4	10.82	0.58	3.8	10	7	4.08	----	1.64	"	"
50.02	18.4	12.89	0.69	3.8	12	9	4.11	----	2.04	"	"
50.52	12.8	8.93	0.44	3.4	9	6	4.14	----	1.29	"	"
51.07	16.7	11.60	0.69	4.1	11	8	4.18	----	1.80	"	"
51.54	20.5	14.19	0.88	4.3	14	9	4.21	----	2.30	"	130-140
52.08	16.3	11.23	0.67	4.1	16	11	4.25	----	1.74	CLAY	120-130
52.53	13.8	9.48	0.49	3.6	9	6	4.27	----	1.40	Silty CLAY to CLAY	"
53.09	14.1	9.64	0.43	3.0	9	6	4.31	----	1.44	"	"
53.54	12.9	8.79	0.34	2.6	6	4	4.33	----	1.28	Clayey SILT to Silty CLAY	110-120
54.05	17.1	11.61	0.58	3.4	11	8	4.36	----	1.83	Silty CLAY to CLAY	120-130
54.51	24.3	16.44	0.62	2.6	12	8	4.39	----	2.79	Clayey SILT to Silty CLAY	"
55.07	31.3	21.07	1.07	3.4	16	11	4.43	----	3.72	"	130-140

PROJECT: LEVEES - STEVENS CREEK
LOCATION: Mountain View CA
PROJ. NO.: 2227E(PGE-04)
Terminated at 70.0 feet

CPT NO.: CPT-12
DATE : 09-08-2008
TIME : 12:37:11
Groundwater measured at 15.2 feet

PACIFIC GEOTECHNICAL
cpts by John Sarmiento & Associates

DEPTH (feet)	Qc (tsf)	Qc' (tsf)	Fs (tsf)	Rf (%)	SPT (N)	SPT' (N')	EffVtStr (ksf)	PHI (deg.)	SU (ksf)	SOIL BEHAVIOR TYPE	DENSITY RANGE (pcf)
55.52	29.3	19.64	1.04	3.5	15	10	4.47	----	3.44	Clayey SILT to Silty CLAY	130-140
56.06	65.6	43.75	3.36	5.1	66	44	4.51	----	8.28	Very Stiff Fine Grained *	"
56.51	54.0	35.87	3.19	5.9	54	36	4.54	----	6.73	CLAY	"
57.01	29.0	19.17	1.15	4.0	19	13	4.57	----	3.39	Silty CLAY to CLAY	"
57.54	25.3	16.64	1.05	4.2	17	11	4.61	----	2.89	"	"
58.08	19.0	12.44	0.90	4.7	19	12	4.65	----	2.05	CLAY	"
58.53	15.5	10.11	0.74	4.8	16	10	4.68	----	1.58	"	120-130
59.08	22.1	14.34	0.96	4.3	15	10	4.72	----	2.45	Silty CLAY to CLAY	130-140
59.54	21.1	13.63	1.00	4.7	21	14	4.75	----	2.32	CLAY	"
60.07	31.1	19.99	1.97	6.3	31	20	4.79	----	3.64	"	"
60.53	28.7	18.36	1.64	5.7	29	18	4.83	----	3.32	"	"
61.07	28.0	17.82	1.51	5.4	28	18	4.87	----	3.22	"	"
61.52	25.9	16.41	1.59	6.1	26	16	4.90	----	2.94	"	"
62.05	20.4	12.86	1.03	5.0	20	13	4.94	----	2.20	"	"
62.52	23.9	15.00	1.07	4.5	16	10	4.97	----	2.66	Silty CLAY to CLAY	"
63.04	37.1	23.17	1.83	4.9	37	23	5.01	----	4.42	CLAY	"
63.51	32.0	19.91	1.55	4.8	32	20	5.04	----	3.73	"	"
64.05	45.7	28.32	2.02	4.4	30	19	5.08	----	5.55	Silty CLAY to CLAY	"
64.57	23.5	14.51	1.09	4.6	24	15	5.12	----	2.59	CLAY	"
65.00	15.3	9.42	0.77	5.0	15	9	5.15	----	1.49	"	120-130
65.52	16.4	10.06	0.89	5.4	16	10	5.18	----	1.64	"	"
66.04	19.9	12.16	1.05	5.3	20	12	5.22	----	2.10	"	130-140
66.57	21.9	13.32	1.27	5.8	22	13	5.26	----	2.36	"	"
67.02	26.0	15.76	1.48	5.7	26	16	5.29	----	2.90	"	"
67.54	27.5	16.61	1.68	6.1	28	17	5.33	----	3.10	"	"
68.06	27.3	16.42	1.65	6.0	27	16	5.36	----	3.07	"	"
68.50	24.4	14.62	1.35	5.5	24	15	5.40	----	2.68	"	"
69.08	16.4	9.79	0.84	5.1	16	10	5.43	----	1.60	"	120-130
69.54	16.0	9.52	0.74	4.6	16	10	5.46	----	1.55	"	"
70.02	25.5	15.12	1.12	4.4	17	10	5.49	----	2.81	Silty CLAY to CLAY	130-140

DEPTH = Sampling interval (.1 feet)
Qc = Tip bearing resistance TotStr = Total Stress using est. density**
Fs = Sleeve friction resistance Phi = Soil friction angle*
Rf = Tip/Sleeve ratio Su = Undrained Soil Strength* (Nk=10 for Qc<9 tsf)
SPT = Equivalent Standard Penetration Test* (Nk=12 for Qc=9 to 12 tsf) (Nk=15 for Qc>12 tsf)
References: * Robertson and Campanella, 1988
** Olsen, 1989 *** Durgunoglu & Mitchell, 1975

PROJECT: LEVEES - STEVENS CREEK
LOCATION: Mountain View CA
PROJ. NO.: 2227E(PGE-04)
Terminated at 70.0 feet

CPT NO.: CPT-13
DATE : 09-08-2008
TIME : 14:52:29
Groundwater measured at 16.3 feet

PACIFIC GEOTECHNICAL
cpts by John Sarmiento & Associates

DEPTH (feet)	Qc (tsf)	Qc' (tsf)	Fs (tsf)	Rf (%)	SPT (N)	SPT' (N')	EffVtStr (ksf)	PHI (deg.)	SU (ksf)	SOIL BEHAVIOR TYPE	DENSITY RANGE (pcf)
0.50	113.6	181.76	2.17	1.9	38	61	0.06	41	----	Silty SAND to Sandy SILT	130-140
1.04	44.6	71.36	2.86	6.4	45	71	0.13	----	5.94	CLAY	"
1.55	35.3	56.48	1.87	5.3	35	56	0.20	----	4.69	"	"
2.05	21.8	34.88	1.41	6.5	22	35	0.27	----	2.89	"	"
2.57	63.0	100.80	1.23	2.0	21	34	0.34	38	----	Silty SAND to Sandy SILT	"
3.00	28.0	44.80	1.81	6.5	28	45	0.40	----	3.71	CLAY	"
3.58	16.7	26.72	0.82	4.9	17	27	0.47	----	2.20	"	120-130
4.00	21.7	34.72	1.16	5.3	22	35	0.52	----	2.86	"	130-140
4.53	55.4	88.64	3.25	5.9	55	89	0.60	----	7.35	"	"
5.07	32.2	51.52	2.11	6.6	32	52	0.67	----	4.25	"	"
5.51	34.5	55.20	2.16	6.3	35	55	0.73	----	4.55	"	"
6.06	26.9	42.96	1.61	6.0	27	43	0.80	----	3.53	"	"
6.51	43.0	66.06	1.80	4.2	22	33	0.86	----	5.68	Clayey SILT to Silty CLAY	"
7.05	32.8	48.02	1.63	5.0	33	48	0.94	----	4.31	CLAY	"
7.59	34.6	48.29	1.62	4.7	23	32	1.01	----	4.55	Silty CLAY to CLAY	"
8.03	40.6	55.39	2.22	5.5	41	55	1.07	----	5.34	CLAY	"
8.57	36.7	48.69	2.05	5.6	37	49	1.14	----	4.82	"	"
9.03	28.3	36.63	1.75	6.2	28	37	1.20	----	3.69	"	"
9.56	23.2	29.19	1.42	6.1	23	29	1.27	----	3.01	"	"
10.01	17.8	21.87	1.23	6.9	18	22	1.34	----	2.28	"	"
10.56	15.5	18.50	1.06	6.8	16	18	1.41	----	1.97	"	"
11.01	13.5	15.74	1.02	7.6	14	16	1.47	----	1.70	"	120-130
11.56	14.3	16.27	0.96	6.7	14	16	1.53	----	1.80	"	"
12.05	17.3	19.27	1.00	5.8	17	19	1.60	----	2.20	"	130-140
12.59	13.8	15.03	0.89	6.4	14	15	1.67	----	1.73	"	120-130
13.05	19.3	20.59	1.25	6.5	19	21	1.73	----	2.46	"	130-140
13.59	12.3	12.90	0.85	6.9	12	13	1.80	----	1.52	"	120-130
14.05	12.8	13.24	0.94	7.3	13	13	1.86	----	1.58	"	"
14.50	9.3	9.50	0.82	8.8	9	9	1.91	----	1.39	"	"
15.05	35.2	35.32	1.80	5.1	35	35	1.99	----	4.56	"	130-140
15.57	24.2	24.17	1.51	6.2	24	24	2.06	----	3.09	"	"
16.02	21.3	21.25	0.87	4.1	14	14	2.12	----	2.70	Silty CLAY to CLAY	"
16.56	18.7	18.63	1.11	5.9	19	19	2.19	----	2.35	CLAY	"
17.02	14.3	14.23	0.81	5.7	14	14	2.25	----	1.76	"	120-130
17.56	15.0	14.92	0.73	4.9	15	15	2.28	----	1.85	"	"
18.01	22.4	22.26	1.11	5.0	22	22	2.31	----	2.83	"	130-140
18.56	15.9	15.79	0.75	4.7	16	16	2.35	----	1.96	"	120-130
19.01	11.1	11.02	0.44	4.0	11	11	2.37	----	1.64	"	110-120
19.55	6.9	6.84	0.35	5.1	7	7	2.40	----	1.12	"	"
20.01	7.6	7.54	0.50	6.6	8	8	2.42	----	1.26	"	"
20.54	6.7	6.64	0.46	6.9	7	7	2.45	----	1.07	"	"
21.07	10.2	10.10	0.59	5.8	10	10	2.49	----	1.47	"	120-130
21.51	13.0	12.81	0.79	6.1	13	13	2.51	----	1.55	"	"
22.09	10.7	10.42	0.65	6.1	11	10	2.55	----	1.54	"	"
22.54	9.1	8.79	0.47	5.2	9	9	2.57	----	1.27	"	110-120
23.08	8.6	8.23	0.52	6.0	9	8	2.60	----	1.42	"	"
23.52	8.1	7.69	0.36	4.4	8	8	2.62	----	1.32	"	"
24.06	11.7	10.97	0.60	5.1	12	11	2.66	----	1.69	"	120-130
24.50	12.1	11.24	0.63	5.2	12	11	2.69	----	1.40	"	"
25.06	9.4	8.62	0.54	5.7	9	9	2.72	----	1.30	"	"
25.51	10.5	9.53	0.49	4.7	11	10	2.75	----	1.48	"	"
26.05	10.4	9.33	0.50	4.8	10	9	2.78	----	1.45	"	"
26.58	14.2	12.58	0.58	4.1	14	13	2.82	----	1.67	"	"
27.02	14.9	13.06	0.56	3.8	10	9	2.84	----	1.76	Silty CLAY to CLAY	"
27.57	10.1	8.76	0.40	4.0	10	9	2.87	----	1.39	CLAY	110-120

PROJECT: LEVEES - STEVENS CREEK
LOCATION: Mountain View CA
PROJ. NO.: 2227E(PGE-04)
Terminated at 70.0 feet

CPT NO.: CPT-13
DATE : 09-08-2008
TIME : 14:52:29
Groundwater measured at 16.3 feet

PACIFIC GEOTECHNICAL
cpts by John Sarmiento & Associates

DEPTH (feet)	Qc (tsf)	Qc' (tsf)	Fs (tsf)	Rf (%)	SPT (N)	SPT' (N')	EffVtStr (ksf)	PHI (deg.)	SU (ksf)	SOIL BEHAVIOR TYPE	DENSITY RANGE (pcf)
28.09	8.3	7.12	0.30	3.6	8	7	2.90	----	1.30	CLAY	110-120
28.56	14.5	12.30	0.51	3.5	10	8	2.93	----	1.69	Silty CLAY to CLAY	120-130
29.01	23.0	19.26	0.86	3.7	15	13	2.96	----	2.82	"	130-140
29.54	26.4	21.78	1.46	5.5	26	22	3.00	----	3.27	CLAY	"
30.07	27.6	22.65	1.50	5.4	28	23	3.04	----	3.42	"	"
30.52	27.0	22.05	1.55	5.7	27	22	3.07	----	3.34	"	"
31.04	24.9	20.23	1.48	5.9	25	20	3.11	----	3.05	"	"
31.60	23.9	19.31	1.25	5.2	24	19	3.15	----	2.92	"	"
32.04	22.5	18.09	1.19	5.3	23	18	3.18	----	2.73	"	"
32.57	17.2	13.76	0.96	5.6	17	14	3.21	----	2.01	"	120-130
33.00	10.8	8.61	0.70	6.5	11	9	3.24	----	1.45	"	"
33.53	14.7	11.66	0.82	5.6	15	12	3.28	----	1.67	"	"
34.06	13.5	10.66	0.64	4.7	14	11	3.31	----	1.51	"	"
34.52	9.7	7.63	0.56	5.8	10	8	3.34	----	1.25	"	"
35.06	8.5	6.66	0.34	4.0	9	7	3.37	----	1.25	"	110-120
35.51	7.9	6.17	0.24	3.0	5	4	3.38	----	1.13	Silty CLAY to CLAY	100-110
36.03	9.8	7.62	0.39	4.0	10	8	3.41	----	1.25	CLAY	110-120
36.56	11.4	8.82	0.54	4.7	11	9	3.45	----	1.51	"	120-130
37.00	10.2	7.86	0.52	5.1	10	8	3.47	----	1.31	"	"
37.53	15.2	11.66	0.58	3.8	10	8	3.51	----	1.71	Silty CLAY to CLAY	"
38.02	19.7	15.03	0.88	4.5	20	15	3.54	----	2.30	CLAY	130-140
38.55	12.7	9.64	0.58	4.6	13	10	3.57	----	1.37	"	120-130
39.08	11.4	8.62	0.34	3.0	8	6	3.60	----	1.49	Silty CLAY to CLAY	110-120
39.51	20.8	15.65	0.56	2.7	10	8	3.63	----	2.44	Clayey SILT to Silty CLAY	120-130
40.04	17.8	13.33	0.49	2.8	9	7	3.66	----	2.03	"	"
40.57	22.4	16.69	0.66	2.9	11	8	3.70	----	2.64	"	"
41.01	16.0	11.87	0.76	4.8	16	12	3.72	----	1.79	CLAY	"
41.56	14.1	10.40	0.46	3.3	9	7	3.76	----	1.53	Silty CLAY to CLAY	"
42.08	10.0	7.35	0.30	3.0	7	5	3.79	----	1.22	"	110-120
42.51	12.7	9.29	0.43	3.4	8	6	3.81	----	1.33	"	120-130
43.03	11.9	8.67	0.38	3.2	8	6	3.84	----	1.53	"	110-120
43.57	11.5	8.33	0.52	4.5	12	8	3.87	----	1.46	CLAY	120-130
44.04	52.9	38.12	1.03	1.9	18	13	3.91	32	----	Silty SAND to Sandy SILT	130-140
44.57	13.9	9.96	0.43	3.1	9	7	3.94	----	1.48	Silty CLAY to CLAY	120-130
45.03	11.2	8.00	0.37	3.3	7	5	3.96	----	1.39	"	110-120
45.57	10.5	7.46	0.30	2.9	7	5	3.99	----	1.27	"	"
46.02	9.3	6.59	0.28	3.0	6	4	4.02	----	1.06	"	"
46.56	7.8	5.51	0.23	2.9	5	4	4.04	----	0.97	"	100-110
47.02	7.5	5.29	0.21	2.8	5	4	4.06	----	0.91	"	"
47.55	8.6	6.04	0.45	5.2	9	6	4.09	----	1.12	CLAY	110-120
48.06	14.0	9.80	0.40	2.9	7	5	4.12	----	1.46	Clayey SILT to Silty CLAY	120-130
48.52	20.5	14.30	0.61	3.0	10	7	4.15	----	2.33	"	"
49.07	22.8	15.83	0.68	3.0	11	8	4.18	----	2.63	"	"
49.51	14.3	9.90	0.45	3.1	10	7	4.21	----	1.49	Silty CLAY to CLAY	"
50.06	11.4	7.86	0.34	3.0	8	5	4.24	----	1.37	"	110-120
50.52	13.2	9.07	0.41	3.1	9	6	4.27	----	1.34	"	120-130
51.01	18.1	12.39	0.66	3.6	12	8	4.30	----	1.99	"	"
51.56	15.0	10.23	0.38	2.5	8	5	4.33	----	1.57	Clayey SILT to Silty CLAY	"
52.02	19.2	13.04	0.54	2.8	10	7	4.36	----	2.12	"	"
52.56	24.5	16.56	1.17	4.8	25	17	4.40	----	2.83	CLAY	130-140
53.02	25.7	17.30	1.36	5.3	26	17	4.43	----	2.98	"	"
53.56	28.9	19.36	1.19	4.1	19	13	4.47	----	3.40	Silty CLAY to CLAY	"
54.01	30.6	20.41	1.20	3.9	20	14	4.51	----	3.63	"	"
54.54	47.6	31.59	2.38	5.0	32	21	4.54	----	5.89	"	"
55.08	47.3	31.24	2.63	5.6	47	31	4.58	----	5.84	CLAY	"

PROJECT: LEVEES - STEVENS CREEK
LOCATION: Mountain View CA
PROJ. NO.: 2227E(PGE-04)
Terminated at 70.0 feet

CPT NO.: CPT-13
DATE : 09-08-2008
TIME : 14:52:29
Groundwater measured at 16.3 feet

PACIFIC GEOTECHNICAL
cpts by John Sarmiento & Associates

DEPTH (feet)	Qc (tsf)	Qc' (tsf)	Fs (tsf)	Rf (%)	SPT (N)	SPT' (N')	EffVtStr (ksf)	PHI (deg.)	SU (ksf)	SOIL BEHAVIOR TYPE	DENSITY RANGE (pcf)
55.53	30.1	19.79	1.43	4.8	30	20	4.62	----	3.55	CLAY	130-140
56.07	24.2	15.83	1.68	6.9	24	16	4.66	----	2.75	"	"
56.51	21.7	14.14	1.09	5.0	22	14	4.69	----	2.42	"	"
57.04	16.0	10.38	0.77	4.8	16	10	4.72	----	1.65	"	120-130
57.56	24.8	16.01	1.20	4.8	25	16	4.76	----	2.82	"	130-140
58.01	23.7	15.23	1.25	5.3	24	15	4.79	----	2.67	"	"
58.55	15.7	10.05	0.75	4.8	16	10	4.82	----	1.60	"	120-130
59.08	16.0	10.19	1.06	6.6	16	10	4.86	----	1.63	"	130-140
59.51	28.0	17.75	1.58	5.6	28	18	4.89	----	3.23	"	"
60.04	26.1	16.46	1.51	5.8	26	16	4.93	----	2.97	"	"
60.57	21.8	13.68	1.18	5.4	22	14	4.97	----	2.39	"	"
61.04	15.4	9.62	0.90	5.8	15	10	5.00	----	1.54	"	120-130
61.56	21.9	13.63	0.86	3.9	15	9	5.04	----	2.40	Silty CLAY to CLAY	130-140
62.01	34.1	21.15	1.58	4.6	23	14	5.07	----	4.02	"	"
62.53	21.8	13.47	0.94	4.3	15	9	5.11	----	2.38	"	"
63.05	20.7	12.74	0.92	4.4	21	13	5.15	----	2.23	CLAY	"
63.53	27.5	16.86	1.02	3.7	14	8	5.18	----	3.13	Clayey SILT to Silty CLAY	"
64.06	33.6	20.52	1.50	4.5	22	14	5.22	----	3.94	Silty CLAY to CLAY	"
64.58	23.8	14.48	1.81	7.6	24	14	5.26	----	2.62	CLAY	"
65.01	171.7	104.18	1.13	0.7	34	21	5.28	38	----	SAND	110-120
65.53	23.7	14.33	0.72	3.0	12	7	5.31	----	2.60	Clayey SILT to Silty CLAY	120-130
66.05	12.5	7.53	0.59	4.7	13	8	5.35	----	1.11	CLAY	"
66.56	21.0	12.60	0.99	4.7	21	13	5.38	----	2.23	"	130-140
67.08	17.5	10.46	1.10	6.3	18	10	5.42	----	1.76	"	"
67.51	17.4	10.37	0.95	5.5	17	10	5.45	----	1.75	"	120-130
68.03	21.3	12.64	1.38	6.5	21	13	5.49	----	2.26	"	130-140
68.55	18.7	11.05	1.08	5.8	19	11	5.52	----	1.91	"	"
69.07	21.3	12.54	1.31	6.2	21	13	5.56	----	2.25	"	"
69.50	26.5	15.54	1.33	5.0	27	16	5.59	----	2.94	"	"
70.03	27.8	16.24	1.25	4.5	19	11	5.63	----	3.11	Silty CLAY to CLAY	"

DEPTH = Sampling interval (.1 feet)
Qc = Tip bearing resistance TotStr = Total Stress using est. density**
Fs = Sleeve friction resistance Phi = Soil friction angle*
Rf = Tip/Sleeve ratio Su = Undrained Soil Strength* (Nk=10 for Qc<9 tsf)
SPT = Equivalent Standard Penetration Test* (Nk=12 for Qc=9 to 12 tsf) (Nk=15 for Qc>12 tsf)
References: * Robertson and Campanella, 1988
** Olsen, 1989 *** Durgunoglu & Mitchell, 1975

PROJECT: LEVEES - STEVENS CREEK
LOCATION: Mountain View CA
PROJ. NO.: 2227E(PGE-04)
Terminated at 70.0 feet

CPT NO.: CPT-14
DATE : 09-09-2008
TIME : 09:50:20
Groundwater measured at 21.5 feet

PACIFIC GEOTECHNICAL
cpts by John Sarmiento & Associates

DEPTH (feet)	Qc (tsf)	Qc' (tsf)	Fs (tsf)	Rf (%)	SPT (N)	SPT' (N')	EffVtStr (ksf)	PHI (deg.)	SU (ksf)	SOIL BEHAVIOR TYPE	DENSITY RANGE (pcf)
0.52	230.2	368.32	5.65	2.5	77	123	0.06	46	----	Silty SAND to Sandy SILT	130-140
1.07	94.5	151.20	2.94	3.1	38	60	0.13	----	12.59	Sandy SILT to Clayey SILT	"
1.58	40.0	64.00	2.72	6.8	40	64	0.20	----	5.32	CLAY	"
2.09	68.8	110.08	1.85	2.7	28	44	0.27	----	9.16	Sandy SILT to Clayey SILT	"
2.59	30.8	49.28	1.31	4.3	21	33	0.34	----	4.08	Silty CLAY to CLAY	"
3.04	46.7	74.72	1.59	3.4	23	37	0.40	----	6.20	Clayey SILT to Silty CLAY	"
3.50	59.7	95.52	3.15	5.3	60	96	0.46	----	7.93	Very Stiff Fine Grained *	"
4.07	63.4	101.44	4.06	6.4	63	101	0.54	----	8.42	"	"
4.52	175.6	280.96	7.42	4.2	176	281	0.60	----	23.37	"	>140
5.08	106.1	169.76	4.46	4.2	106	170	0.68	----	14.10	"	130-140
5.54	61.4	98.24	1.92	3.1	25	39	0.74	----	8.14	Sandy SILT to Clayey SILT	"
6.05	48.5	77.18	2.13	4.4	32	51	0.81	----	6.41	Silty CLAY to CLAY	"
6.50	48.9	74.82	2.71	5.5	49	75	0.87	----	6.46	CLAY	"
7.05	60.3	87.83	3.58	5.9	60	88	0.94	----	7.98	Very Stiff Fine Grained *	"
7.50	56.1	78.39	4.30	7.7	56	78	1.01	----	7.41	CLAY	"
8.07	40.2	54.57	3.25	8.1	40	55	1.08	----	5.29	"	"
8.54	41.3	54.69	2.91	7.0	41	55	1.15	----	5.43	"	"
9.09	52.6	67.64	3.19	6.1	53	68	1.22	----	6.93	"	"
9.56	27.0	33.86	1.48	5.5	27	34	1.28	----	3.51	"	"
10.05	36.9	45.11	1.33	3.6	18	23	1.35	----	4.83	Clayey SILT to Silty CLAY	"
10.52	449.3	535.69	8.97	2.0	90	107	1.41	48	----	SAND	"
11.04	151.8	175.67	5.43	3.6	76	88	1.48	41	----	SAND to Clayey SAND *	>140
11.53	111.9	126.52	5.43	4.9	112	127	1.55	----	14.82	Very Stiff Fine Grained *	"
12.04	146.3	161.79	2.79	1.9	49	54	1.62	41	----	Silty SAND to Sandy SILT	130-140
12.51	47.8	51.77	2.37	5.0	32	35	1.69	----	6.26	Silty CLAY to CLAY	"
13.05	26.6	28.14	1.22	4.6	27	28	1.76	----	3.43	CLAY	"
13.52	39.0	40.66	1.52	3.9	20	20	1.82	----	5.08	Clayey SILT to Silty CLAY	"
14.08	45.1	46.20	2.18	4.8	30	31	1.90	----	5.89	Silty CLAY to CLAY	"
14.56	30.1	30.36	1.09	3.6	15	15	1.96	----	3.88	Clayey SILT to Silty CLAY	"
15.05	32.6	32.58	0.92	2.8	16	16	2.03	----	4.21	"	"
15.56	21.8	21.76	0.96	4.4	22	22	2.10	----	2.77	CLAY	"
16.03	22.0	21.93	1.43	6.5	22	22	2.16	----	2.79	"	"
16.52	21.0	20.90	1.34	6.4	21	21	2.23	----	2.65	"	"
17.10	19.0	18.88	1.15	6.1	19	19	2.31	----	2.38	"	"
17.57	18.0	17.87	1.13	6.3	18	18	2.37	----	2.24	"	"
18.06	20.9	20.72	1.04	5.0	21	21	2.44	----	2.62	"	"
18.50	20.8	20.59	0.83	4.0	14	14	2.49	----	2.61	Silty CLAY to CLAY	"
19.05	25.4	24.56	0.90	3.5	13	12	2.57	----	3.22	Clayey SILT to Silty CLAY	"
19.53	18.4	17.43	0.81	4.4	18	17	2.63	----	2.28	CLAY	120-130
20.02	16.0	14.84	0.58	3.6	11	10	2.69	----	1.95	Silty CLAY to CLAY	"
20.59	14.2	12.83	0.42	3.0	7	6	2.76	----	1.71	Clayey SILT to Silty CLAY	"
21.07	13.5	11.93	0.43	3.2	9	8	2.82	----	1.61	Silty CLAY to CLAY	"
21.56	11.2	9.78	0.45	4.0	11	10	2.85	----	1.63	CLAY	"
22.05	16.9	14.59	0.52	3.1	8	7	2.88	----	2.06	Clayey SILT to Silty CLAY	"
22.53	37.4	31.93	0.61	1.6	12	11	2.91	31	----	Silty SAND to Sandy SILT	"
23.01	14.2	11.98	0.56	3.9	14	12	2.94	----	1.69	CLAY	"
23.58	9.9	8.25	0.44	4.4	10	8	2.97	----	1.39	"	110-120
24.05	12.1	9.98	0.53	4.4	12	10	3.00	----	1.40	"	120-130
24.53	10.8	8.87	0.56	5.2	11	9	3.03	----	1.53	"	"
25.07	13.3	10.87	0.59	4.4	13	11	3.07	----	1.55	"	"
25.54	12.0	9.77	0.60	5.0	12	10	3.10	----	1.37	"	"
26.03	16.7	13.53	0.79	4.7	17	14	3.13	----	2.00	"	"
26.51	10.4	8.39	0.59	5.7	10	8	3.16	----	1.44	"	"
27.08	6.3	5.07	0.27	4.3	6	5	3.18	----	0.90	"	100-110
27.56	8.2	6.57	0.40	4.9	8	7	3.21	----	1.28	"	110-120

PROJECT: LEVEES - STEVENS CREEK
LOCATION: Mountain View CA
PROJ. NO.: 2227E(PGE-04)
Terminated at 70.0 feet

CPT NO.: CPT-14
DATE : 09-09-2008
TIME : 09:50:20
Groundwater measured at 21.5 feet

PACIFIC GEOTECHNICAL
cpts by John Sarmiento & Associates

DEPTH (feet)	Qc (tsf)	Qc' (tsf)	Fs (tsf)	Rf (%)	SPT (N)	SPT' (N')	EffVtStr (ksf)	PHI (deg.)	SU (ksf)	SOIL BEHAVIOR TYPE	DENSITY RANGE (pcf)
28.04	10.2	8.14	0.48	4.7	10	8	3.23	----	1.39	CLAY	110-120
28.57	10.9	8.63	0.42	3.9	11	9	3.29	----	1.50	"	"
29.07	10.9	8.63	0.42	3.9	11	9	3.29	----	1.50	"	"
29.56	13.0	10.25	0.43	3.3	9	7	3.32	----	1.48	Silty CLAY to CLAY	120-130
30.04	15.2	11.93	0.51	3.4	10	8	3.35	----	1.77	"	"
30.52	13.3	10.40	0.40	3.0	9	7	3.38	----	1.51	"	"
31.09	17.2	13.37	0.61	3.5	11	9	3.41	----	2.02	"	"
31.59	15.8	12.23	0.63	4.0	11	8	3.44	----	1.83	"	"
32.08	15.7	12.10	0.70	4.5	16	12	3.47	----	1.82	CLAY	"
32.54	17.4	13.35	0.85	4.9	17	13	3.50	----	2.04	"	"
33.02	18.5	14.12	0.91	4.9	19	14	3.54	----	2.18	"	130-140
33.59	19.1	14.50	0.76	4.0	13	10	3.57	----	2.26	Silty CLAY to CLAY	120-130
34.07	13.3	10.05	0.63	4.7	13	10	3.60	----	1.48	CLAY	"
34.55	8.6	6.47	0.37	4.3	9	6	3.63	----	1.27	"	110-120
35.03	11.6	8.69	0.46	4.0	12	9	3.66	----	1.56	"	120-130
35.50	7.5	5.60	0.35	4.7	8	6	3.68	----	1.04	"	110-120
36.08	7.7	5.72	0.31	4.0	8	6	3.71	----	1.07	"	"
36.56	15.1	11.17	0.62	4.1	15	11	3.74	----	1.70	"	120-130
37.04	16.3	12.00	0.99	6.1	16	12	3.77	----	1.86	"	"
37.52	11.2	8.20	0.46	4.1	11	8	3.80	----	1.46	"	"
38.05	14.9	10.86	0.47	3.2	10	7	3.84	----	1.66	Silty CLAY to CLAY	"
38.53	23.2	16.81	0.86	3.7	15	11	3.87	----	2.76	"	130-140
39.01	28.0	20.18	1.19	4.3	19	13	3.91	----	3.40	"	"
39.57	23.1	16.54	1.09	4.7	23	17	3.95	----	2.74	CLAY	"
40.05	15.8	11.26	0.54	3.4	11	8	3.98	----	1.76	Silty CLAY to CLAY	120-130
40.53	15.6	11.07	0.42	2.7	8	6	4.01	----	1.73	Clayey SILT to Silty CLAY	"
41.00	16.8	11.88	0.55	3.3	11	8	4.04	----	1.89	Silty CLAY to CLAY	"
41.56	12.4	8.73	0.37	3.0	8	6	4.07	----	1.30	"	110-120
42.04	21.8	15.30	0.59	2.7	11	8	4.10	----	2.55	Clayey SILT to Silty CLAY	120-130
42.51	11.0	7.69	0.61	5.5	11	8	4.13	----	1.38	CLAY	"
43.07	13.7	9.54	0.63	4.6	14	10	4.16	----	1.46	"	"
43.55	19.4	13.46	0.85	4.4	19	13	4.19	----	2.21	"	"
44.02	12.7	8.78	0.77	6.1	13	9	4.22	----	1.32	"	"
44.52	273.8	188.54	2.65	1.0	55	38	4.25	42	----	SAND	"
45.06	352.3	241.59	3.28	0.9	70	48	4.29	43	----	"	"
45.59	327.5	223.66	2.63	0.8	66	45	4.32	43	----	"	"
46.02	256.6	174.93	0.85	0.3	43	29	4.33	41	----	Gravelly SAND to SAND	90-100
46.55	24.6	16.70	0.68	2.8	12	8	4.37	----	2.88	Clayey SILT to Silty CLAY	120-130
47.08	13.6	9.20	0.32	2.4	7	5	4.39	----	1.41	"	110-120
47.52	16.7	11.26	0.59	3.5	11	8	4.42	----	1.82	Silty CLAY to CLAY	120-130
48.09	18.1	12.15	0.54	3.0	9	6	4.46	----	2.00	Clayey SILT to Silty CLAY	"
48.56	18.2	12.17	0.65	3.6	12	8	4.49	----	2.01	Silty CLAY to CLAY	"
49.03	16.2	10.79	0.74	4.6	16	11	4.52	----	1.74	CLAY	"
49.59	18.3	12.14	0.71	3.9	12	8	4.55	----	2.02	Silty CLAY to CLAY	"
50.06	16.0	10.57	0.70	4.4	16	11	4.58	----	1.71	CLAY	"
50.53	32.4	21.31	1.19	3.7	16	11	4.61	----	3.89	Clayey SILT to Silty CLAY	130-140
51.04	42.1	27.56	1.59	3.8	21	14	4.65	----	5.18	"	"
51.51	26.4	17.21	1.01	3.8	18	11	4.69	----	3.08	Silty CLAY to CLAY	"
52.08	26.9	17.44	1.04	3.9	18	12	4.73	----	3.14	"	"
52.54	33.4	21.56	1.35	4.0	22	14	4.76	----	4.01	"	"
53.10	41.8	26.83	2.13	5.1	42	27	4.80	----	5.12	CLAY	"
53.55	44.5	28.44	2.15	4.8	30	19	4.83	----	5.48	Silty CLAY to CLAY	"
54.02	37.5	23.86	1.82	4.9	25	16	4.87	----	4.54	"	"
54.52	41.9	26.53	1.85	4.4	28	18	4.90	----	5.12	"	"
55.07	37.7	23.74	1.95	5.2	38	24	4.94	----	4.56	CLAY	"

PROJECT: LEVEES - STEVENS CREEK
LOCATION: Mountain View CA
PROJ. NO.: 2227E(PGE-04)
Terminated at 70.0 feet

CPT NO.: CPT-14
DATE : 09-09-2008
TIME : 09:50:20
Groundwater measured at 21.5 feet

PACIFIC GEOTECHNICAL
cpts by John Sarmiento & Associates

DEPTH (feet)	Qc (tsf)	Qc' (tsf)	Fs (tsf)	Rf (%)	SPT (N)	SPT' (N')	EffVtStr (ksf)	PHI (deg.)	SU (ksf)	SOIL BEHAVIOR TYPE	DENSITY RANGE (pcf)
55.53	22.9	14.36	1.19	5.2	23	14	4.98	----	2.58	CLAY	130-140
56.08	20.7	12.91	0.94	4.5	21	13	5.02	----	2.28	"	"
56.54	25.3	15.73	1.16	4.6	25	16	5.05	----	2.89	"	"
57.00	27.2	16.85	1.48	5.4	27	17	5.08	----	3.14	"	"
57.50	30.1	18.58	1.66	5.5	30	19	5.12	----	3.52	"	"
58.04	33.8	20.77	1.72	5.1	34	21	5.16	----	4.01	"	"
58.58	36.3	22.22	1.96	5.4	36	22	5.20	----	4.34	"	"
59.04	39.6	24.15	1.96	4.9	40	24	5.23	----	4.77	"	"
59.57	36.8	22.35	2.00	5.4	37	22	5.27	----	4.40	"	"
60.02	22.1	13.38	1.37	6.2	22	13	5.30	----	2.43	"	"
60.53	13.6	8.20	0.68	5.0	14	8	5.34	----	1.29	"	120-130
61.07	11.8	7.09	0.64	5.4	12	7	5.37	----	1.31	"	"
61.52	21.4	12.82	1.06	5.0	21	13	5.40	----	2.32	"	130-140
62.05	33.6	20.04	1.38	4.1	22	13	5.44	----	3.95	Silty CLAY to CLAY	"
62.58	40.7	24.17	2.01	4.9	41	24	5.48	----	4.89	CLAY	"
63.02	31.7	18.76	1.79	5.6	32	19	5.51	----	3.68	"	"
63.50	25.7	15.15	1.46	5.7	26	15	5.55	----	2.88	"	"
64.05	19.3	11.33	0.98	5.1	19	11	5.59	----	2.02	"	"
64.58	28.5	16.66	1.17	4.1	19	11	5.62	----	3.24	Silty CLAY to CLAY	"
65.03	30.7	17.88	1.16	3.8	15	9	5.66	----	3.53	Clayey SILT to Silty CLAY	"
65.56	10.7	6.21	0.45	4.2	11	6	5.68	----	1.08	CLAY	110-120
66.00	22.7	13.13	1.07	4.7	23	13	5.72	----	2.46	"	130-140
66.54	33.6	19.35	1.99	5.9	34	19	5.76	----	3.91	"	"
67.05	33.0	18.93	1.84	5.6	33	19	5.79	----	3.82	"	"
67.58	28.2	16.10	1.61	5.7	28	16	5.83	----	3.18	"	"
68.01	26.8	15.25	1.87	7.0	27	15	5.86	----	2.99	"	"
68.54	22.1	12.52	1.54	7.0	22	13	5.90	----	2.36	"	"
69.04	22.1	12.52	1.54	7.0	22	13	5.90	----	2.36	"	"
69.51	17.4	9.79	0.94	5.4	17	10	5.96	----	1.72	"	120-130
70.03	15.5	8.69	0.59	3.8	10	6	5.99	----	1.46	Silty CLAY to CLAY	"

DEPTH = Sampling interval (.1 feet)
Qc = Tip bearing resistance   TotStr = Total Stress using est. density**
Fs = Sleeve friction resistance   Phi = Soil friction angle*
Rf = Tip/Sleeve ratio   Su = Undrained Soil Strength* (Nk=10 for Qc<9 tsf)
SPT = Equivalent Standard Penetration Test* (Nk=12 for Qc=9 to 12 tsf) (Nk=15 for Qc>12 tsf)
References: * Robertson and Campanella, 1988
** Olsen, 1989 *** Durgunoglu & Mitchell, 1975

PROJECT: LEVEES - STEVENS CREEK
LOCATION: Mountain View CA
PROJ. NO.: 2227E(PGE-04)
Terminated at 70.0 feet

CPT NO.: CPT-15
DATE : 09-09-2008
TIME : 11:02:12
Groundwater measured at 21.0 feet

PACIFIC GEOTECHNICAL
cpts by John Sarmiento & Associates

DEPTH (feet)	Qc (tsf)	Qc' (tsf)	Fs (tsf)	Rf (%)	SPT (N)	SPT' (N')	EffVtStr (ksf)	PHI (deg.)	SU (ksf)	SOIL BEHAVIOR TYPE	DENSITY RANGE (pcf)
0.50	64.3	102.88	2.90	4.5	43	69	0.06	----	8.57	Silty CLAY to CLAY	130-140
1.07	44.7	71.52	3.03	6.8	45	72	0.13	----	5.95	CLAY	"
1.56	43.9	70.24	2.77	6.3	44	70	0.20	----	5.84	"	"
2.05	32.5	52.00	1.15	3.5	16	26	0.27	----	4.32	Clayey SILT to Silty CLAY	"
2.56	38.3	61.28	2.16	5.6	38	61	0.34	----	5.08	CLAY	"
3.02	28.8	46.08	2.46	8.5	29	46	0.40	----	3.81	"	"
3.55	43.9	70.24	2.77	6.3	44	70	0.47	----	5.82	"	"
4.00	68.3	109.28	2.54	3.7	34	55	0.53	----	9.07	Clayey SILT to Silty CLAY	"
4.54	58.7	93.92	3.73	6.4	59	94	0.60	----	7.79	Very Stiff Fine Grained *	"
5.07	28.2	45.12	1.82	6.5	28	45	0.67	----	3.72	CLAY	"
5.55	45.7	73.12	3.20	7.0	46	73	0.74	----	6.04	"	"
6.01	86.7	138.66	3.74	4.3	87	139	0.80	----	11.51	Very Stiff Fine Grained *	"
6.54	40.4	61.70	3.27	8.1	40	62	0.87	----	5.33	CLAY	"
7.01	51.7	75.67	3.76	7.3	52	76	0.94	----	6.83	"	"
7.51	52.4	73.27	4.08	7.8	52	73	1.00	----	6.92	"	"
8.03	41.2	56.09	3.28	8.0	41	56	1.07	----	5.42	"	"
8.55	63.6	84.28	3.98	6.3	64	84	1.14	----	8.40	Very Stiff Fine Grained *	"
9.04	38.5	49.69	2.60	6.8	39	50	1.21	----	5.05	CLAY	"
9.56	61.9	77.72	3.18	5.1	62	78	1.28	----	8.17	Very Stiff Fine Grained *	"
10.00	52.1	63.91	3.22	6.2	52	64	1.34	----	6.86	CLAY	"
10.54	32.1	38.27	2.25	7.0	32	38	1.41	----	4.19	"	"
11.07	16.5	19.09	1.24	7.5	17	19	1.48	----	2.10	"	"
11.53	18.0	20.40	1.24	6.9	18	20	1.55	----	2.30	"	"
12.02	15.9	17.64	1.20	7.5	16	18	1.61	----	2.01	"	"
12.58	20.7	22.40	1.27	6.1	21	22	1.69	----	2.65	"	"
13.04	16.1	17.07	1.05	6.5	16	17	1.75	----	2.03	"	"
13.57	15.3	15.97	1.00	6.5	15	16	1.82	----	1.92	"	120-130
14.03	16.8	17.29	1.09	6.5	17	17	1.88	----	2.11	"	130-140
14.58	12.3	12.45	0.72	5.9	12	12	1.95	----	1.51	"	120-130
15.04	6.7	6.70	0.49	7.3	7	7	2.00	----	1.14	"	110-120
15.57	19.9	19.87	1.51	7.6	20	20	2.07	----	2.52	"	130-140
16.03	52.8	52.66	2.31	4.4	35	35	2.13	----	6.90	Silty CLAY to CLAY	"
16.56	16.8	16.73	0.99	5.9	17	17	2.21	----	2.09	CLAY	"
17.02	15.7	15.62	1.23	7.8	16	16	2.27	----	1.94	"	"
17.56	16.3	16.19	1.15	7.1	16	16	2.34	----	2.02	"	"
18.01	17.4	17.26	1.25	7.2	17	17	2.40	----	2.16	"	"
18.53	15.0	14.86	1.09	7.3	15	15	2.47	----	1.84	"	"
19.09	14.5	14.16	0.87	6.0	15	14	2.54	----	1.76	"	120-130
19.54	17.2	16.45	0.98	5.7	17	16	2.60	----	2.12	"	130-140
20.09	20.0	18.68	0.85	4.3	13	12	2.67	----	2.49	Silty CLAY to CLAY	120-130
20.54	19.4	17.72	0.94	4.8	19	18	2.73	----	2.40	CLAY	130-140
21.08	16.1	14.53	0.84	5.2	16	15	2.77	----	1.96	"	120-130
21.57	17.9	15.97	0.86	4.8	18	16	2.80	----	2.20	"	"
22.02	20.2	17.83	0.67	3.3	10	9	2.82	----	2.50	Clayey SILT to Silty CLAY	"
22.57	17.7	15.43	0.67	3.8	12	10	2.86	----	2.16	Silty CLAY to CLAY	"
23.02	11.5	9.93	0.42	3.7	8	7	2.88	----	1.66	"	110-120
23.56	11.6	9.91	0.42	3.6	8	7	2.91	----	1.68	"	"
24.01	8.1	6.86	0.29	3.6	8	7	2.93	----	1.30	CLAY	"
24.53	13.4	11.20	0.67	5.0	13	11	2.97	----	1.57	"	120-130
25.01	14.3	11.81	0.65	4.5	14	12	3.00	----	1.69	"	"
25.55	9.5	7.81	0.51	5.4	10	8	3.03	----	1.31	"	110-120
26.09	7.1	5.81	0.31	4.4	7	6	3.05	----	1.08	"	"
26.54	10.2	8.32	0.56	5.5	10	8	3.08	----	1.41	"	120-130
27.08	13.3	10.80	0.74	5.6	13	11	3.12	----	1.54	"	"
27.52	12.2	9.86	0.69	5.7	12	10	3.14	----	1.39	"	"

PROJECT: LEVEES - STEVENS CREEK
LOCATION: Mountain View CA
PROJ. NO.: 2227E(PGE-04)
Terminated at 70.0 feet

CPT NO.: CPT-15
DATE : 09-09-2008
TIME : 11:02:12
Groundwater measured at 21.0 feet

PACIFIC GEOTECHNICAL
cpts by John Sarmiento & Associates

DEPTH (feet)	Qc (tsf)	Qc' (tsf)	Fs (tsf)	Rf (%)	SPT (N)	SPT' (N')	EffVtStr (ksf)	PHI (deg.)	SU (ksf)	SOIL BEHAVIOR TYPE	DENSITY RANGE (pcf)
28.00	9.9	7.97	0.63	6.4	10	8	3.17	----	1.35	CLAY	120-130
28.55	7.3	5.85	0.38	5.2	7	6	3.20	----	1.09	"	110-120
29.09	10.1	8.06	0.68	6.7	10	8	3.24	----	1.37	"	120-130
29.53	9.6	7.63	0.58	6.0	10	8	3.26	----	1.28	"	"
30.08	10.9	8.63	0.45	4.1	11	9	3.29	----	1.49	"	110-120
30.52	10.2	8.04	0.57	5.6	10	8	3.32	----	1.37	"	120-130
31.05	26.8	21.00	1.23	4.6	18	14	3.36	----	3.31	Silty CLAY to CLAY	130-140
31.59	19.7	15.36	0.86	4.4	20	15	3.39	----	2.35	CLAY	120-130
32.04	22.5	17.46	1.16	5.2	23	17	3.43	----	2.72	"	130-140
32.58	11.0	8.49	0.76	6.9	11	8	3.46	----	1.48	"	120-130
33.02	10.5	8.07	0.60	5.7	11	8	3.49	----	1.39	"	"
33.55	19.2	14.68	0.95	4.9	19	15	3.52	----	2.27	"	130-140
34.00	19.7	14.99	0.90	4.6	20	15	3.56	----	2.33	"	"
34.59	7.5	5.68	0.35	4.7	8	6	3.59	----	1.05	"	110-120
35.04	6.2	4.68	0.26	4.2	6	5	3.61	----	0.79	"	100-110
35.58	93.7	70.39	1.05	1.1	23	18	3.64	36	----	SAND to Silty SAND	120-130
36.01	69.2	51.73	1.35	2.0	23	17	3.67	34	----	Silty SAND to Sandy SILT	130-140
36.54	46.0	34.18	1.16	2.5	18	14	3.71	----	5.82	Sandy SILT to Clayey SILT	"
37.06	95.2	70.34	3.41	3.6	38	28	3.75	----	12.37	"	"
37.57	102.3	75.21	1.23	1.2	26	19	3.78	36	----	SAND to Silty SAND	120-130
38.06	130.7	95.63	1.08	0.8	26	19	3.81	38	----	SAND	"
38.56	226.2	164.94	1.02	0.5	45	33	3.83	41	----	"	100-110
39.06	178.6	129.79	0.65	0.4	36	26	3.85	40	----	"	"
39.57	88.7	64.08	2.29	2.6	35	26	3.89	----	11.49	Sandy SILT to Clayey SILT	130-140
40.08	21.0	15.08	1.20	5.7	21	15	3.93	----	2.46	CLAY	"
40.50	14.6	10.44	0.74	5.1	15	10	3.96	----	1.60	"	120-130
41.05	18.2	12.94	0.48	2.6	9	6	3.99	----	2.08	Clayey SILT to Silty CLAY	"
41.59	26.6	18.82	1.05	3.9	18	13	4.03	----	3.19	Silty CLAY to CLAY	130-140
42.01	20.9	14.73	1.01	4.8	21	15	4.06	----	2.43	CLAY	"
42.54	11.8	8.29	0.45	3.8	12	8	4.09	----	1.51	"	120-130
43.06	17.0	11.89	0.59	3.5	11	8	4.12	----	1.90	Silty CLAY to CLAY	"
43.59	11.5	8.02	0.40	3.5	8	5	4.15	----	1.45	"	110-120
44.03	10.3	7.16	0.48	4.7	10	7	4.18	----	1.25	CLAY	"
44.54	11.9	8.24	0.51	4.3	12	8	4.21	----	1.51	"	120-130
45.06	10.9	7.52	0.43	3.9	11	8	4.24	----	1.34	"	110-120
45.51	10.5	7.22	0.36	3.4	7	5	4.26	----	1.27	Silty CLAY to CLAY	"
46.03	15.1	10.35	0.52	3.4	10	7	4.29	----	1.62	"	120-130
46.55	19.1	13.03	0.88	4.6	19	13	4.32	----	2.15	CLAY	"
47.07	21.3	14.47	0.91	4.3	14	10	4.36	----	2.44	Silty CLAY to CLAY	130-140
47.54	27.1	18.33	1.32	4.9	27	18	4.40	----	3.21	CLAY	"
48.07	24.2	16.29	1.39	5.7	24	16	4.43	----	2.82	"	"
48.51	21.5	14.41	1.19	5.5	22	14	4.47	----	2.45	"	"
49.03	16.0	10.68	0.79	4.9	16	11	4.50	----	1.71	"	120-130
49.56	13.1	8.71	0.51	3.9	13	9	4.53	----	1.32	"	"
50.08	10.7	7.08	0.49	4.6	11	7	4.56	----	1.25	"	"
50.52	8.9	5.87	0.40	4.5	9	6	4.59	----	1.13	"	110-120
51.00	10.8	7.11	0.44	4.1	11	7	4.61	----	1.26	"	"
51.53	9.5	6.23	0.29	3.1	6	4	4.64	----	1.04	Silty CLAY to CLAY	"
52.05	28.2	18.40	1.15	4.1	19	12	4.68	----	3.32	"	130-140
52.56	84.0	54.53	3.56	4.2	42	27	4.72	----	10.75	Clayey SILT to Silty CLAY	"
53.04	498.7	322.48	5.33	1.1	100	64	4.75	45	----	SAND	120-130
53.55	77.0	49.55	1.84	2.4	26	17	4.78	34	----	Silty SAND to Sandy SILT	130-140
54.07	36.9	23.63	1.24	3.4	18	12	4.82	----	4.46	Clayey SILT to Silty CLAY	"
54.56	73.0	46.52	3.40	4.7	73	47	4.86	----	9.27	Very Stiff Fine Grained *	"
55.03	41.9	26.58	1.69	4.0	21	13	4.89	----	5.12	Clayey SILT to Silty CLAY	"

PROJECT: LEVEES - STEVENS CREEK
LOCATION: Mountain View CA
PROJ. NO.: 2227E(PGE-04)
Terminated at 70.0 feet

CPT NO.: CPT-15
DATE : 09-09-2008
TIME : 11:02:12
Groundwater measured at 21.0 feet

PACIFIC GEOTECHNICAL
cpts by John Sarmiento & Associates

DEPTH (feet)	Qc (tsf)	Qc' (tsf)	Fs (tsf)	Rf (%)	SPT (N)	SPT' (N')	EffVtStr (ksf)	PHI (deg.)	SU (ksf)	SOIL BEHAVIOR TYPE	DENSITY RANGE (pcf)
55.52	26.1	16.48	0.96	3.7	13	8	4.93	----	3.01	Clayey SILT to Silty CLAY	130-140
56.02	82.3	51.70	4.56	5.5	82	52	4.96	----	10.49	Very Stiff Fine Grained *	"
56.52	88.7	55.43	5.36	6.0	89	55	5.00	----	11.34	"	>140
57.03	57.4	35.73	3.19	5.6	57	36	5.04	----	7.17	CLAY	130-140
57.52	27.9	17.30	1.86	6.7	28	17	5.07	----	3.23	"	"
58.02	26.8	16.56	1.81	6.8	27	17	5.11	----	3.08	"	"
58.53	24.8	15.26	1.55	6.3	25	15	5.15	----	2.81	"	"
59.05	26.7	16.37	1.76	6.6	27	16	5.18	----	3.05	"	"
59.57	23.9	14.59	1.52	6.4	24	15	5.22	----	2.68	"	"
60.00	17.9	10.89	1.13	6.3	18	11	5.25	----	1.87	"	"
60.56	16.1	9.76	0.82	5.1	16	10	5.29	----	1.63	"	120-130
61.01	12.5	7.56	0.62	5.0	13	8	5.32	----	1.14	"	"
61.54	11.2	6.75	0.46	4.1	11	7	5.35	----	1.21	"	"
62.07	17.7	10.62	0.69	3.9	12	7	5.38	----	1.83	Silty CLAY to CLAY	"
62.52	17.8	10.65	0.77	4.3	18	11	5.41	----	1.84	CLAY	"
63.05	14.0	8.35	0.56	4.0	14	8	5.44	----	1.33	"	"
63.53	12.4	7.37	0.39	3.1	8	5	5.47	----	1.11	Silty CLAY to CLAY	110-120
64.06	12.3	7.29	0.40	3.3	8	5	5.50	----	1.09	"	"
64.51	13.6	8.04	0.45	3.3	9	5	5.53	----	1.26	"	120-130
65.04	23.3	13.71	0.94	4.0	16	9	5.56	----	2.55	"	130-140
65.58	26.5	15.52	1.35	5.1	27	16	5.60	----	2.97	CLAY	"
66.02	35.0	20.43	1.71	4.9	35	20	5.64	----	4.10	"	"
66.54	30.4	17.67	2.13	7.0	30	18	5.67	----	3.48	"	"
67.08	27.7	16.03	1.83	6.6	28	16	5.71	----	3.12	"	"
67.52	26.6	15.34	1.95	7.3	27	15	5.74	----	2.97	"	"
68.04	24.7	14.18	1.98	8.0	25	14	5.78	----	2.71	"	"
68.56	18.2	10.41	1.38	7.6	18	10	5.82	----	1.84	"	"
69.07	16.0	9.11	0.96	6.0	16	9	5.85	----	1.54	"	120-130
69.50	13.8	7.84	0.75	5.4	14	8	5.88	----	1.24	"	"
70.06	13.8	7.84	0.74	5.4	14	8	5.88	----	1.24	"	"

DEPTH = Sampling interval (.1 feet)
Qc = Tip bearing resistance   TotStr = Total Stress using est. density**
Fs = Sleeve friction resistance   Phi = Soil friction angle*
Rf = Tip/Sleeve ratio   Su = Undrained Soil Strength* (Nk=10 for Qc<9 tsf)
SPT = Equivalent Standard Penetration Test* (Nk=12 for Qc=9 to 12 tsf) (Nk=15 for Qc>12 tsf)
References: * Robertson and Campanella, 1988
** Olsen, 1989 *** Durgunoglu & Mitchell, 1975

PROJECT: LEVEES - STEVENS CREEK
LOCATION: Mountain View CA
PROJ. NO.: 2227E(PGE-04)
Terminated at 70.0 feet

CPT NO.: CPT-16
DATE : 09-09-2008
TIME : 12:15:08
Groundwater measured at 21.1 feet

PACIFIC GEOTECHNICAL
cpts by John Sarmiento & Associates

DEPTH (feet)	Qc (tsf)	Qc' (tsf)	Fs (tsf)	Rf (%)	SPT (N)	SPT' (N')	EffVtStr (ksf)	PHI (deg.)	SU (ksf)	SOIL BEHAVIOR TYPE	DENSITY RANGE (pcf)
0.56	113.7	181.92	3.21	2.8	45	73	0.07	----	15.16	Sandy SILT to Clayey SILT	130-140
1.04	56.9	91.04	2.55	4.5	38	61	0.13	----	7.58	Silty CLAY to CLAY	"
1.52	101.7	162.72	3.99	3.9	51	81	0.19	----	13.55	Clayey SILT to Silty CLAY	"
2.00	57.5	92.00	3.01	5.2	58	92	0.26	----	7.65	CLAY	"
2.51	57.0	91.20	3.24	5.7	57	91	0.33	----	7.58	"	"
3.05	59.0	94.40	3.56	6.0	59	94	0.40	----	7.84	Very Stiff Fine Grained *	"
3.53	75.8	121.28	4.80	6.3	76	121	0.47	----	10.08	"	"
4.07	105.4	168.64	4.43	4.2	105	169	0.54	----	14.02	"	"
4.57	51.6	82.56	2.01	3.9	26	41	0.61	----	6.84	Clayey SILT to Silty CLAY	"
5.08	37.3	59.68	2.60	7.0	37	60	0.68	----	4.93	CLAY	"
5.50	40.3	64.48	2.14	5.3	40	64	0.73	----	5.32	"	"
5.59	35.5	56.80	1.99	5.6	36	57	0.74	----	4.68	"	"
6.02	23.8	38.01	1.35	5.7	24	38	0.80	----	3.12	"	"
6.55	42.8	65.32	1.15	2.7	17	26	0.87	----	5.65	Sandy SILT to Clayey SILT	"
7.07	27.4	39.87	1.44	5.3	27	40	0.94	----	3.59	CLAY	"
7.51	39.6	55.35	2.43	6.1	40	55	1.00	----	5.21	"	"
8.04	35.7	48.58	2.30	6.4	36	49	1.08	----	4.69	"	"
8.57	27.7	36.67	1.71	6.2	28	37	1.15	----	3.62	"	"
9.07	14.7	18.94	1.28	8.7	15	19	1.21	----	1.88	"	"
9.52	33.3	41.90	2.67	8.0	33	42	1.27	----	4.36	"	"
10.04	42.2	51.66	2.55	6.0	42	52	1.35	----	5.54	"	"
10.56	41.1	48.92	2.77	6.7	41	49	1.42	----	5.39	"	"
11.08	41.5	48.00	3.11	7.5	42	48	1.49	----	5.43	"	"
11.52	56.9	64.51	3.05	5.4	57	65	1.55	----	7.48	"	"
12.04	69.7	77.25	2.49	3.6	35	39	1.62	----	9.19	Clayey SILT to Silty CLAY	"
12.51	36.4	39.52	2.38	6.5	36	40	1.68	----	4.74	CLAY	"
13.04	125.3	132.82	1.73	1.4	31	33	1.75	40	----	SAND to Silty SAND	"
13.55	92.8	96.82	1.80	1.9	31	32	1.82	38	----	Silty SAND to Sandy SILT	"
14.09	18.8	19.31	0.76	4.0	13	13	1.89	----	2.38	Silty CLAY to CLAY	120-130
14.53	28.9	29.30	0.63	2.2	12	12	1.94	----	3.72	Sandy SILT to Clayey SILT	"
15.05	28.4	28.40	0.70	2.5	11	11	2.01	----	3.65	"	"
15.54	61.8	61.72	0.61	1.0	15	15	2.07	35	----	SAND to Silty SAND	"
16.09	17.5	17.45	0.66	3.8	12	12	2.14	----	2.19	Silty CLAY to CLAY	"
16.54	13.6	13.55	0.56	4.1	14	14	2.19	----	1.67	CLAY	"
17.07	15.1	15.02	0.64	4.2	15	15	2.26	----	1.86	"	"
17.52	9.3	9.24	0.41	4.4	9	9	2.31	----	1.36	"	110-120
18.06	18.9	18.76	1.05	5.6	19	19	2.38	----	2.36	"	130-140
18.54	19.1	18.93	1.36	7.1	19	19	2.45	----	2.38	"	"
19.08	17.1	16.81	1.35	7.9	17	17	2.52	----	2.11	"	"
19.52	18.7	18.01	1.26	6.7	19	18	2.58	----	2.32	"	"
20.06	18.1	17.00	1.09	6.0	18	17	2.65	----	2.24	"	"
20.58	25.4	23.26	1.40	5.5	25	23	2.72	----	3.21	"	"
21.02	22.1	19.81	1.54	7.0	22	20	2.78	----	2.76	"	"
21.56	43.1	38.15	0.60	1.4	14	13	2.82	32	----	Silty SAND to Sandy SILT	120-130
22.05	35.5	31.12	0.32	0.9	12	10	2.84	31	----	"	110-120
22.51	56.4	48.92	0.84	1.5	19	16	2.87	34	----	"	120-130
23.03	120.9	103.75	1.00	0.8	24	21	2.90	38	----	SAND	110-120
23.57	21.3	18.04	0.78	3.7	14	12	2.93	----	2.63	Silty CLAY to CLAY	120-130
24.01	7.6	6.39	0.21	2.8	5	4	2.95	----	1.21	"	100-110
24.55	22.6	18.75	0.73	3.2	11	9	2.99	----	2.80	Clayey SILT to Silty CLAY	120-130
25.59	41.2	33.70	1.43	3.5	21	17	3.06	----	5.27	"	130-140
26.03	15.1	12.30	0.63	4.2	15	12	3.09	----	1.79	CLAY	120-130
26.57	15.0	12.16	0.82	5.5	15	12	3.12	----	1.77	"	"
27.01	7.8	6.30	0.41	5.3	8	6	3.15	----	1.21	"	110-120
27.55	8.3	6.68	0.44	5.3	8	7	3.17	----	1.30	"	"

PROJECT: LEVEES - STEVENS CREEK
LOCATION: Mountain View CA
PROJ. NO.: 2227E(PGE-04)
Terminated at 70.0 feet

CPT NO.: CPT-16
DATE : 09-09-2008
TIME : 12:15:08
Groundwater measured at 21.1 feet

PACIFIC GEOTECHNICAL
cpts by John Sarmiento & Associates

DEPTH (feet)	Qc (tsf)	Qc' (tsf)	Fs (tsf)	Rf (%)	SPT (N)	SPT' (N')	EffVtStr (ksf)	PHI (deg.)	SU (ksf)	SOIL BEHAVIOR TYPE	DENSITY RANGE (pcf)
28.04	8.8	7.06	0.36	4.1	9	7	3.20	----	1.40	CLAY	110-120
28.58	13.4	10.70	0.73	5.4	13	11	3.23	----	1.54	"	120-130
29.03	14.1	11.21	0.87	6.2	14	11	3.26	----	1.63	"	"
29.57	9.8	7.75	0.51	5.2	10	8	3.30	----	1.31	"	"
30.02	11.6	9.14	0.69	5.9	12	9	3.32	----	1.61	"	"
30.56	15.9	12.46	0.75	4.7	16	12	3.36	----	1.86	"	"
31.00	15.2	11.87	0.68	4.5	15	12	3.39	----	1.76	"	"
31.55	13.8	10.72	0.60	4.3	14	11	3.42	----	1.57	"	"
32.09	10.1	7.81	0.50	5.0	10	8	3.45	----	1.34	"	"
32.54	12.2	9.39	0.45	3.7	8	6	3.48	----	1.35	Silty CLAY to CLAY	"
33.04	21.6	16.53	0.81	3.8	14	11	3.52	----	2.60	"	130-140
33.56	27.4	20.85	1.17	4.3	18	14	3.56	----	3.36	"	"
34.09	26.4	19.98	1.24	4.7	26	20	3.59	----	3.23	CLAY	"
34.59	30.3	22.80	1.30	4.3	20	15	3.63	----	3.74	Silty CLAY to CLAY	"
35.03	28.1	21.04	1.20	4.3	19	14	3.66	----	3.44	"	"
35.58	23.9	17.79	0.97	4.1	16	12	3.70	----	2.88	"	"
36.03	30.6	22.66	1.51	4.9	31	23	3.73	----	3.77	CLAY	"
36.57	22.0	16.19	1.44	6.5	22	16	3.77	----	2.62	"	"
37.02	19.9	14.57	1.07	5.4	20	15	3.81	----	2.33	"	"
37.57	12.8	9.32	0.85	6.6	13	9	3.84	----	1.38	"	120-130
38.00	18.2	13.13	0.87	4.8	18	13	3.90	----	2.09	"	"
38.50	18.2	13.13	0.87	4.8	18	13	3.90	----	2.09	"	"
39.05	25.7	18.43	1.05	4.1	17	12	3.94	----	3.09	Silty CLAY to CLAY	130-140
39.51	30.5	21.75	1.52	5.0	31	22	3.97	----	3.72	CLAY	"
40.05	31.2	22.12	1.58	5.1	31	22	4.01	----	3.81	"	"
40.51	32.0	22.60	1.72	5.4	32	23	4.04	----	3.92	"	"
41.00	33.6	23.62	2.03	6.0	34	24	4.08	----	4.12	"	"
41.53	28.9	20.23	1.67	5.8	29	20	4.12	----	3.49	"	"
42.07	29.4	20.48	1.34	4.6	20	14	4.16	----	3.56	Silty CLAY to CLAY	"
42.53	30.5	21.16	1.41	4.6	20	14	4.19	----	3.70	"	"
43.05	32.6	22.51	1.87	5.7	33	23	4.23	----	3.97	CLAY	"
43.50	31.5	21.66	1.61	5.1	32	22	4.26	----	3.82	"	"
44.06	19.6	13.41	1.16	5.9	20	13	4.30	----	2.23	"	"
44.50	10.3	7.02	0.58	5.6	10	7	4.33	----	1.23	"	120-130
45.05	9.4	6.39	0.47	5.0	9	6	4.36	----	1.08	"	110-120
45.50	20.3	13.74	0.93	4.6	20	14	4.39	----	2.31	"	130-140
46.04	19.3	13.00	0.89	4.6	19	13	4.43	----	2.17	"	"
46.58	13.4	8.98	0.70	5.2	13	9	4.46	----	1.38	"	120-130
47.01	11.5	7.68	0.59	5.1	12	8	4.49	----	1.41	"	"
47.54	19.7	13.10	0.88	4.5	20	13	4.53	----	2.21	"	130-140
48.07	30.5	20.18	1.59	5.2	31	20	4.57	----	3.65	"	"
48.52	29.3	19.30	1.72	5.9	29	19	4.60	----	3.49	"	"
49.05	30.0	19.67	1.49	5.0	30	20	4.64	----	3.57	"	"
49.57	28.7	18.72	1.42	4.9	29	19	4.68	----	3.40	"	"
50.00	25.2	16.37	1.14	4.5	17	11	4.71	----	2.93	Silty CLAY to CLAY	"
50.53	21.1	13.64	0.89	4.2	14	9	4.75	----	2.37	"	"
51.07	30.0	19.29	1.17	3.9	15	10	4.79	----	3.56	Clayey SILT to Silty CLAY	"
51.51	37.9	24.27	1.81	4.8	25	16	4.82	----	4.61	Silty CLAY to CLAY	"
52.04	32.4	20.64	1.99	6.1	32	21	4.86	----	3.87	CLAY	"
52.56	36.7	23.27	1.64	4.5	24	16	4.89	----	4.44	Silty CLAY to CLAY	"
53.07	40.8	25.74	2.09	5.1	41	26	4.93	----	4.98	CLAY	"
53.50	37.6	23.62	2.27	6.0	38	24	4.96	----	4.55	"	"
54.02	37.7	23.56	2.13	5.6	38	24	5.00	----	4.56	"	"
54.53	40.4	25.15	2.34	5.8	40	25	5.04	----	4.91	"	"
55.04	46.1	28.59	2.68	5.8	46	29	5.07	----	5.67	"	"

PROJECT: LEVEES - STEVENS CREEK
LOCATION: Mountain View CA
PROJ. NO.: 2227E(PGE-04)
Terminated at 70.0 feet

CPT NO.: CPT-16
DATE : 09-09-2008
TIME : 12:15:08
Groundwater measured at 21.1 feet

PACIFIC GEOTECHNICAL
cpts by John Sarmiento & Associates

DEPTH (feet)	Qc (tsf)	Qc' (tsf)	Fs (tsf)	Rf (%)	SPT (N)	SPT' (N')	EffVtStr (ksf)	PHI (deg.)	SU (ksf)	SOIL BEHAVIOR TYPE	DENSITY RANGE (pcf)
55.56	50.3	31.07	3.60	7.2	50	31	5.11	----	6.22	CLAY	130-140
56.05	57.0	35.07	3.16	5.5	57	35	5.15	----	7.11	"	"
56.55	39.5	24.21	2.49	6.3	40	24	5.18	----	4.77	"	"
57.05	31.6	19.30	2.03	6.4	32	19	5.22	----	3.72	"	"
57.57	33.5	20.37	2.03	6.1	34	20	5.26	----	3.96	"	"
58.07	31.4	19.02	1.79	5.7	31	19	5.29	----	3.68	"	"
58.57	27.0	16.29	1.47	5.4	27	16	5.33	----	3.09	"	"
59.07	29.8	17.91	1.30	4.4	20	12	5.37	----	3.46	Silty CLAY to CLAY	"
59.55	19.4	11.62	1.12	5.8	19	12	5.40	----	2.07	CLAY	"
60.05	15.3	9.13	0.70	4.6	15	9	5.43	----	1.52	"	120-130
60.53	17.5	10.41	0.89	5.1	18	10	5.46	----	1.80	"	"
61.01	21.6	12.80	0.94	4.4	14	9	5.50	----	2.35	Silty CLAY to CLAY	130-140
61.52	17.9	10.57	0.90	5.0	18	11	5.53	----	1.85	CLAY	120-130
62.03	56.9	33.47	1.29	2.3	23	13	5.57	----	7.04	Sandy SILT to Clayey SILT	130-140
62.54	29.0	16.99	1.09	3.8	15	8	5.60	----	3.32	Clayey SILT to Silty CLAY	"
63.05	26.8	15.63	1.50	5.6	27	16	5.64	----	3.02	CLAY	"
63.53	174.4	101.33	4.29	2.5	58	34	5.68	38	----	Silty SAND to Sandy SILT	"
64.02	55.3	32.00	2.39	4.3	28	16	5.71	----	6.81	Clayey SILT to Silty CLAY	"
64.52	14.1	8.13	0.76	5.4	14	8	5.74	----	1.32	CLAY	120-130
65.01	14.8	8.51	0.69	4.7	15	9	5.77	----	1.41	"	"
65.56	306.5	175.57	2.02	0.7	51	29	5.80	41	----	Gravelly SAND to SAND	110-120
66.00	452.2	258.21	3.51	0.8	75	43	5.83	43	----	"	120-130
66.52	496.9	282.69	3.67	0.7	83	47	5.86	44	----	"	"
67.03	344.3	195.37	1.62	0.5	57	33	5.89	42	----	"	100-110
67.51	283.1	160.18	1.97	0.7	57	32	5.91	41	----	SAND	110-120
68.03	358.1	201.98	1.89	0.5	60	34	5.94	42	----	Gravelly SAND to SAND	"
68.53	280.5	157.73	1.59	0.6	47	26	5.96	41	----	"	"
69.01	299.3	167.73	2.38	0.8	60	34	5.99	41	----	SAND	120-130
69.52	78.1	43.62	1.96	2.5	31	17	6.03	----	9.81	Sandy SILT to Clayey SILT	130-140
70.03	18.9	10.53	0.75	4.0	13	7	6.06	----	1.91	Silty CLAY to CLAY	120-130

DEPTH = Sampling interval (.1 feet)
Qc = Tip bearing resistance TotStr = Total Stress using est. density**
Fs = Sleeve friction resistance Phi = Soil friction angle*
Rf = Tip/Sleeve ratio Su = Undrained Soil Strength* (Nk=10 for Qc<9 tsf)
SPT = Equivalent Standard Penetration Test* (Nk=12 for Qc=9 to 12 tsf) (Nk=15 for Qc>12 tsf)
References: * Robertson and Campanella, 1988
** Olsen, 1989 *** Durgunoglu & Mitchell, 1975

PROJECT: LEVEES - STEVENS CREEK
LOCATION: Mountain View CA
PROJ. NO.: 2227E(PGE-04)
Terminated at 37.0 feet

CPT NO.: CPT-17
DATE : 09-10-2008
TIME : 15:03:11
Groundwater estimated at 8.0 feet

PACIFIC GEOTECHNICAL
cpts by John Sarmiento & Associates

DEPTH (feet)	Qc (tsf)	Qc' (tsf)	Fs (tsf)	Rf (%)	SPT (N)	SPT' (N')	EffVtStr (ksf)	PHI (deg.)	SU (ksf)	SOIL BEHAVIOR TYPE	DENSITY RANGE (pcf)
0.52	376.7	602.72	6.67	1.8	75	121	0.06	>48	----	SAND	130-140
1.03	50.5	80.80	3.44	6.8	51	81	0.13	----	6.72	CLAY	"
1.51	24.3	38.88	1.43	5.9	24	39	0.19	----	3.23	"	"
2.04	20.6	32.96	1.04	5.0	21	33	0.27	----	2.73	"	"
2.51	27.2	43.52	1.02	3.7	14	22	0.33	----	3.60	Clayey SILT to Silty CLAY	"
3.07	41.5	66.40	1.42	3.4	21	33	0.41	----	5.51	"	"
3.57	29.6	47.36	1.20	4.1	20	32	0.47	----	3.92	Silty CLAY to CLAY	"
4.05	27.2	43.52	0.91	3.3	14	22	0.54	----	3.59	Clayey SILT to Silty CLAY	"
4.55	26.4	42.24	1.21	4.6	26	42	0.60	----	3.48	CLAY	"
5.08	20.0	32.00	0.95	4.8	20	32	0.68	----	2.62	"	"
5.54	23.4	37.44	1.23	5.3	23	37	0.74	----	3.07	"	"
6.02	24.1	38.49	1.05	4.4	16	26	0.80	----	3.16	Silty CLAY to CLAY	"
6.50	17.4	26.66	1.04	6.0	17	27	0.87	----	2.26	CLAY	"
7.08	10.1	14.75	0.52	5.1	10	15	0.94	----	1.61	"	120-130
7.55	8.1	11.39	0.49	6.0	8	11	0.99	----	1.52	"	110-120
8.03	7.1	9.87	0.37	5.2	7	10	1.02	----	1.32	"	"
8.52	8.7	11.98	0.55	6.3	9	12	1.04	----	1.63	"	"
9.03	13.5	18.36	0.79	5.9	14	18	1.08	----	1.72	"	120-130
9.51	16.5	22.19	0.85	5.2	17	22	1.11	----	2.12	"	"
10.00	14.3	19.00	0.69	4.8	14	19	1.14	----	1.82	"	"
10.57	8.0	10.50	0.35	4.4	8	11	1.17	----	1.46	"	110-120
11.05	5.1	6.64	0.21	4.1	5	7	1.19	----	0.88	"	100-110
11.53	9.5	12.25	0.46	4.8	10	12	1.21	----	1.46	"	110-120
12.02	16.5	21.00	0.86	5.2	17	21	1.24	----	2.10	"	120-130
12.51	14.5	18.24	0.62	4.3	15	18	1.27	----	1.83	"	"
13.08	10.7	13.28	0.51	4.8	11	13	1.31	----	1.65	"	"
13.56	13.8	16.93	0.47	3.4	9	11	1.34	----	1.73	Silty CLAY to CLAY	"
14.03	10.1	12.25	0.50	5.0	10	12	1.37	----	1.54	CLAY	"
14.51	59.0	70.55	1.80	3.1	24	28	1.40	----	7.74	Sandy SILT to Clayey SILT	130-140
15.06	163.3	192.99	1.00	0.6	33	39	1.43	42	----	SAND	110-120
15.54	174.0	203.54	1.14	0.7	35	41	1.46	42	----	"	"
16.00	252.3	292.76	1.08	0.4	42	49	1.48	44	----	Gravelly SAND to SAND	100-110
16.54	354.1	407.05	1.42	0.4	59	68	1.50	46	----	"	"
17.06	310.9	353.72	3.48	1.1	62	71	1.53	45	----	SAND	120-130
17.50	242.9	274.33	1.47	0.6	49	55	1.56	44	----	"	110-120
18.03	298.2	333.26	2.66	0.9	60	67	1.59	45	----	"	120-130
18.51	250.0	277.11	1.31	0.5	50	55	1.62	44	----	"	110-120
19.04	303.0	333.39	1.29	0.4	51	56	1.64	45	----	Gravelly SAND to SAND	100-110
19.57	219.2	239.83	0.61	0.3	37	40	1.66	43	----	"	90-100
20.02	121.2	131.16	2.20	1.8	40	44	1.69	40	----	Silty SAND to Sandy SILT	130-140
20.56	126.1	134.68	2.03	1.6	32	34	1.73	40	----	SAND to Silty SAND	"
21.02	174.9	185.33	1.38	0.8	35	37	1.75	42	----	SAND	110-120
21.54	171.9	180.80	1.42	0.8	34	36	1.78	41	----	"	120-130
22.01	171.1	178.95	1.23	0.7	34	36	1.81	41	----	"	110-120
22.56	173.0	179.97	0.92	0.5	35	36	1.83	41	----	"	100-110
23.02	104.5	107.99	0.98	0.9	26	27	1.86	38	----	SAND to Silty SAND	120-130
23.58	20.8	21.29	1.08	5.2	21	21	1.90	----	2.58	CLAY	130-140
24.04	17.3	17.57	1.08	6.2	17	18	1.94	----	2.11	"	"
24.59	16.1	16.22	0.92	5.7	16	16	1.97	----	1.94	"	120-130
25.07	10.6	10.60	0.56	5.3	11	11	2.00	----	1.51	"	"
25.53	16.9	16.89	0.69	4.1	11	11	2.03	----	2.04	Silty CLAY to CLAY	"
26.01	19.1	19.08	0.74	3.9	13	13	2.06	----	2.33	"	"
26.58	28.5	28.44	1.02	3.6	14	14	2.10	----	3.58	Clayey SILT to Silty CLAY	130-140
27.06	19.7	19.65	0.75	3.8	13	13	2.13	----	2.40	Silty CLAY to CLAY	120-130
27.53	19.6	19.54	0.67	3.4	10	10	2.16	----	2.39	Clayey SILT to Silty CLAY	"

PROJECT: LEVEES - STEVENS CREEK
LOCATION: Mountain View CA
PROJ. NO.: 2227E(PGE-04)
Terminated at 37.0 feet

CPT NO.: CPT-17
DATE : 09-10-2008
TIME : 15:03:11
Groundwater estimated at 8.0 feet

PACIFIC GEOTECHNICAL
cpts by John Sarmiento & Associates

DEPTH (feet)	Qc (tsf)	Qc' (tsf)	Fs (tsf)	Rf (%)	SPT (N)	SPT' (N')	EffVtStr (ksf)	PHI (deg.)	SU (ksf)	SOIL BEHAVIOR TYPE	DENSITY RANGE (pcf)
28.08	26.4	26.29	1.20	4.5	18	18	2.20	----	3.29	Silty CLAY to CLAY	130-140
28.54	35.6	35.43	1.71	4.8	24	24	2.23	----	4.51	"	"
29.02	44.5	44.26	1.01	2.3	18	18	2.27	----	5.69	Sandy SILT to Clayey SILT	"
29.59	21.4	21.27	0.83	3.9	14	14	2.31	----	2.61	Silty CLAY to CLAY	"
30.06	19.3	19.17	0.77	4.0	13	13	2.34	----	2.32	"	120-130
30.52	13.5	13.40	0.57	4.2	14	13	2.37	----	1.55	CLAY	"
31.08	13.9	13.79	0.63	4.5	14	14	2.40	----	1.60	"	"
31.54	9.3	9.22	0.35	3.8	9	9	2.43	----	1.22	"	110-120
32.03	29.4	29.13	1.24	4.2	20	19	2.46	----	3.65	Silty CLAY to CLAY	130-140
32.58	27.7	27.40	1.70	6.1	28	27	2.50	----	3.42	CLAY	"
33.05	29.4	28.76	1.71	5.8	29	29	2.54	----	3.64	"	"
33.52	16.4	15.88	0.99	6.0	16	16	2.57	----	1.91	"	120-130
34.09	9.9	9.49	0.45	4.5	10	9	2.60	----	1.30	"	110-120
34.55	10.1	9.60	0.39	3.9	10	10	2.62	----	1.32	"	"
35.02	10.3	9.71	0.37	3.6	10	10	2.64	----	1.35	"	"
35.50	11.6	10.82	0.49	4.2	12	11	2.67	----	1.57	"	120-130
36.06	15.2	14.00	0.47	3.1	8	7	2.71	----	1.73	Clayey SILT to Silty CLAY	"
36.54	14.3	13.03	0.45	3.1	10	9	2.74	----	1.60	Silty CLAY to CLAY	"
37.01	10.1	9.12	0.33	3.3	7	6	2.76	----	1.30	"	110-120

DEPTH = Sampling interval (.1 feet)
Qc = Tip bearing resistance
TotStr = Total Stress using est. density**
Fs = Sleeve friction resistance
Phi = Soil friction angle*
Rf = Tip/Sleeve ratio
Su = Undrained Soil Strength* (Nk=10 for Qc<9 tsf)
SPT = Equivalent Standard Penetration Test* (Nk=12 for Qc=9 to 12 tsf) (Nk=15 for Qc>12 tsf)
References: * Robertson and Campanella, 1988
** Olsen, 1989 *** Durgunoglu & Mitchell, 1975

PROJECT: LEVEES - STEVENS CREEK
LOCATION: Mountain View CA
PROJ. NO.: 2227E(PGE-04)
Terminated at 37.0 feet

CPT NO.: CPT-18
DATE : 09-10-2008
TIME : 14:32:42
Groundwater measured at 9.2 feet

PACIFIC GEOTECHNICAL
cpts by John Sarmiento & Associates

DEPTH (feet)	Qc (tsf)	Qc' (tsf)	Fs (tsf)	Rf (%)	SPT (N)	SPT' (N')	EffVtStr (ksf)	PHI (deg.)	SU (ksf)	SOIL BEHAVIOR TYPE	DENSITY RANGE (pcf)
0.52	501.5	802.40	6.52	1.3	100	160	0.06	>48	----	SAND	130-140
1.00	183.9	294.24	4.10	2.2	61	98	0.13	44	----	Silty SAND to Sandy SILT	"
1.55	39.9	63.84	2.96	7.4	40	64	0.20	----	5.31	CLAY	"
2.04	82.9	132.64	2.68	3.2	33	53	0.27	----	11.04	Sandy SILT to Clayey SILT	"
2.55	41.2	65.92	2.25	5.5	41	66	0.33	----	5.47	CLAY	"
3.03	54.5	87.20	2.02	3.7	27	44	0.40	----	7.24	Clayey SILT to Silty CLAY	"
3.51	28.5	45.60	0.80	2.8	14	23	0.46	----	3.77	"	"
4.00	16.2	25.92	0.49	3.0	8	13	0.53	----	2.12	"	120-130
4.57	10.9	17.44	0.37	3.4	7	12	0.59	----	1.77	Silty CLAY to CLAY	110-120
5.00	18.5	29.60	0.77	4.2	12	20	0.64	----	2.42	"	120-130
5.50	19.4	31.04	0.92	4.7	19	31	0.71	----	2.54	CLAY	130-140
6.02	18.5	29.60	0.92	5.0	19	30	0.78	----	2.41	"	"
6.57	18.5	28.56	0.97	5.2	19	29	0.86	----	2.41	"	"
7.06	22.8	33.70	0.96	4.2	15	22	0.92	----	2.98	Silty CLAY to CLAY	"
7.55	23.3	32.88	0.96	4.1	16	22	0.99	----	3.04	"	"
8.04	21.2	29.07	0.82	3.9	14	19	1.06	----	2.76	"	"
8.54	16.3	21.83	0.93	5.7	16	22	1.12	----	2.10	CLAY	120-130
9.03	24.1	31.45	1.01	4.2	16	21	1.18	----	3.13	Silty CLAY to CLAY	130-140
9.52	18.5	23.80	1.08	5.8	19	24	1.22	----	2.38	CLAY	"
10.00	27.4	34.75	0.87	3.2	14	17	1.25	----	3.57	Clayey SILT to Silty CLAY	"
10.50	20.7	25.89	1.14	5.5	21	26	1.29	----	2.67	CLAY	"
11.08	15.9	19.57	1.04	6.5	16	20	1.33	----	2.02	"	"
11.56	13.2	16.05	0.73	5.5	13	16	1.36	----	1.66	"	120-130
12.07	12.5	15.01	0.47	3.8	8	10	1.39	----	1.56	Silty CLAY to CLAY	"
12.55	11.4	13.53	0.47	4.1	11	14	1.42	----	1.76	CLAY	"
13.03	10.4	12.21	0.35	3.4	7	8	1.45	----	1.59	Silty CLAY to CLAY	110-120
13.51	13.3	15.43	0.56	4.2	13	15	1.48	----	1.66	CLAY	120-130
14.02	19.2	22.00	0.86	4.5	19	22	1.51	----	2.44	"	"
14.55	14.1	15.99	0.57	4.0	14	16	1.54	----	1.75	"	"
15.02	10.7	12.02	0.49	4.6	11	12	1.57	----	1.62	"	"
15.55	13.4	14.89	0.52	3.9	13	15	1.61	----	1.65	"	"
16.02	20.0	21.99	1.07	5.4	20	22	1.64	----	2.53	"	130-140
16.56	21.7	23.54	1.14	5.3	22	24	1.68	----	2.75	"	"
17.02	18.2	19.53	1.19	6.5	18	20	1.71	----	2.28	"	"
17.56	18.4	19.49	1.00	5.4	18	19	1.75	----	2.30	"	"
18.01	11.8	12.42	0.63	5.3	12	12	1.78	----	1.77	"	120-130
18.55	17.2	17.96	0.71	4.1	11	12	1.81	----	2.13	Silty CLAY to CLAY	"
19.01	14.9	15.46	0.68	4.6	15	15	1.84	----	1.82	CLAY	"
19.55	18.8	19.35	0.82	4.4	19	19	1.88	----	2.34	"	"
20.09	20.7	21.14	0.80	3.9	14	14	1.91	----	2.59	Silty CLAY to CLAY	"
20.53	26.0	26.35	1.16	4.5	17	18	1.94	----	3.29	"	130-140
21.06	27.9	28.02	1.45	5.2	28	28	1.98	----	3.54	CLAY	"
21.51	28.6	28.59	1.36	4.8	29	29	2.01	----	3.63	"	"
22.05	32.9	32.86	1.43	4.3	22	22	2.05	----	4.20	Silty CLAY to CLAY	"
22.50	28.9	28.85	1.23	4.3	19	19	2.09	----	3.66	"	"
23.04	25.1	25.04	0.94	3.7	17	17	2.13	----	3.15	"	"
23.57	33.0	32.89	1.53	4.6	22	22	2.16	----	4.20	"	"
24.01	29.8	29.68	1.75	5.9	30	30	2.20	----	3.76	CLAY	"
24.54	22.2	22.10	1.37	6.2	22	22	2.23	----	2.75	"	"
25.01	13.3	13.23	0.81	6.1	13	13	2.26	----	1.56	"	120-130
25.54	16.2	16.10	0.88	5.4	16	16	2.30	----	1.94	"	"
26.07	16.7	16.59	0.88	5.3	17	17	2.33	----	2.00	"	"
26.50	19.4	19.26	0.95	4.9	19	19	2.36	----	2.36	"	130-140
27.03	22.1	21.92	0.92	4.2	15	15	2.40	----	2.71	Silty CLAY to CLAY	"
27.57	31.5	31.22	1.36	4.3	21	21	2.44	----	3.96	"	"

PROJECT: LEVEES - STEVENS CREEK
LOCATION: Mountain View CA
PROJ. NO.: 2227E(PGE-04)
Terminated at 37.0 feet

CPT NO.: CPT-18
DATE : 09-10-2008
TIME : 14:32:42
Groundwater measured at 9.2 feet

PACIFIC GEOTECHNICAL
cpts by John Sarmiento & Associates

DEPTH (feet)	Qc (tsf)	Qc' (tsf)	Fs (tsf)	Rf (%)	SPT (N)	SPT' (N')	EffVtStr (ksf)	PHI (deg.)	SU (ksf)	SOIL BEHAVIOR TYPE	DENSITY RANGE (pcf)
28.00	31.1	30.81	1.61	5.2	31	31	2.47	----	3.90	CLAY	130-140
28.53	18.9	18.66	1.06	5.6	19	19	2.51	----	2.27	"	"
29.06	8.9	8.70	0.29	3.3	6	6	2.54	----	1.40	Silty CLAY to CLAY	110-120
29.50	19.7	19.09	0.64	3.2	10	10	2.56	----	2.37	Clayey SILT to Silty CLAY	120-130
30.03	11.5	11.01	0.50	4.3	12	11	2.60	----	1.59	CLAY	"
30.56	11.7	11.08	0.55	4.7	12	11	2.63	----	1.62	"	"
31.05	13.9	13.02	0.56	4.0	14	13	2.66	----	1.58	"	"
31.58	9.3	8.63	0.32	3.4	9	9	2.69	----	1.21	"	110-120
32.02	12.1	11.11	0.42	3.5	8	7	2.72	----	1.34	Silty CLAY to CLAY	120-130
32.55	10.5	9.55	0.32	3.0	7	6	2.74	----	1.40	"	110-120
33.08	12.0	10.80	0.42	3.5	8	7	2.77	----	1.32	"	"
33.52	11.1	9.91	0.40	3.6	7	7	2.80	----	1.49	"	"
34.05	10.6	9.34	0.50	4.7	11	9	2.83	----	1.40	CLAY	120-130
34.59	15.3	13.32	0.67	4.4	15	13	2.86	----	1.74	"	"
35.03	16.8	14.47	0.86	5.1	17	14	2.89	----	1.94	"	"
35.55	14.5	12.33	0.83	5.7	15	12	2.92	----	1.63	"	"
36.07	17.9	15.00	1.11	6.2	18	15	2.96	----	2.08	"	130-140
36.51	13.0	10.78	0.66	5.1	13	11	2.99	----	1.42	"	120-130
37.03	9.5	7.82	0.47	4.9	10	8	3.02	----	1.19	"	110-120

DEPTH = Sampling interval (.1 feet)
Qc = Tip bearing resistance   TotStr = Total Stress using est. density**
Fs = Sleeve friction resistance   Phi = Soil friction angle*
Rf = Tip/Sleeve ratio   Su = Undrained Soil Strength* (Nk=10 for Qc<9 tsf)
SPT = Equivalent Standard Penetration Test* (Nk=12 for Qc=9 to 12 tsf) (Nk=15 for Qc>12 tsf)
References: * Robertson and Campanella, 1988
** Olsen, 1989 *** Durgunoglu & Mitchell, 1975

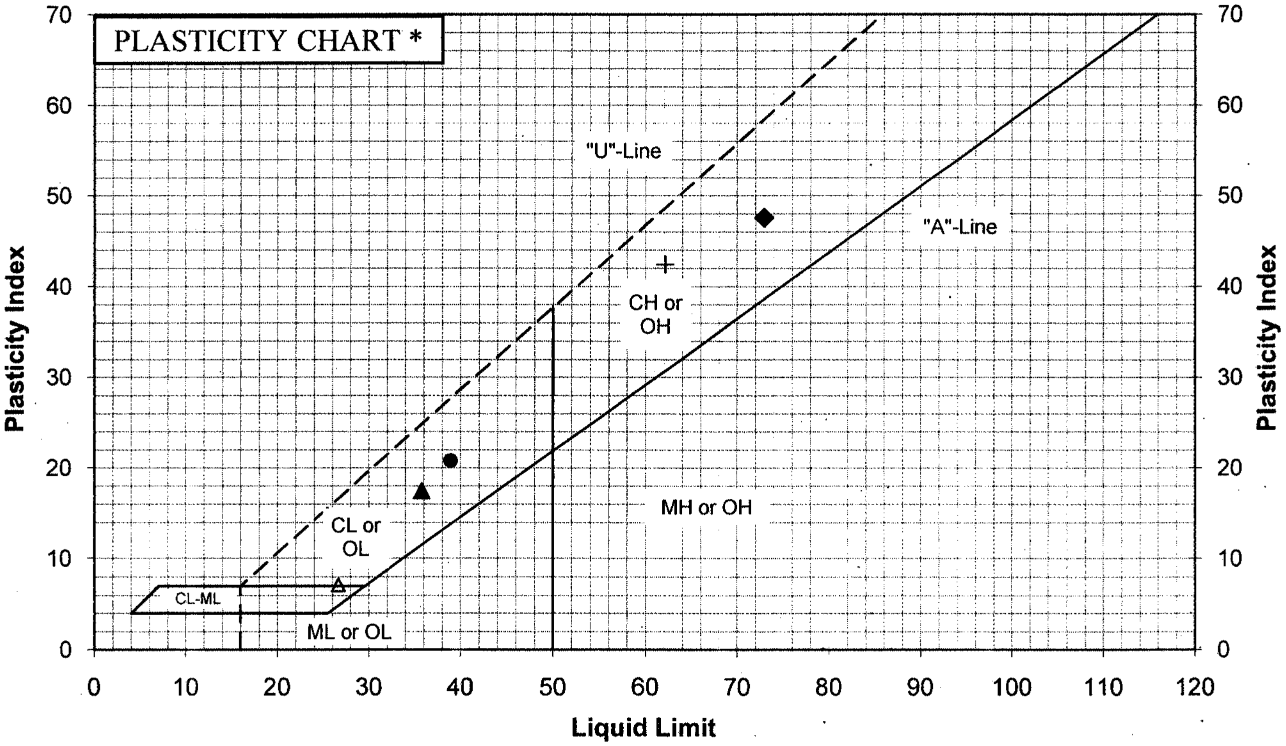
APPENDIX C

LABORATORY TEST RESULTS

ATTERBERG LIMITS TEST RESULTS

PROJECT NAME	**SCVWD Stevens Creek Levees Recertification**	PROJECT No.	2227 E

DATE OF TEST	11/4/2008	11/5/2008	11/5/2008	11/5/2008	11/4/2008
KEY SYMBOL	♦	▲	●	+	Δ
DRILL HOLE No.	B1	B1	B1	B2	B2
DEPTH (ft)	9	19.5-20	29	5.5	33.5-34.5
NATURAL WATER CONTENT (%)	25	23	23	27	21
% Retained No. 40 SIEVE (Est.)	0	10	0	0	15
% PASSING No. 200 SIEVE	NA	72	NA	NA	NA
LIQUID LIMIT	73	36	39	62	27
PLASTIC LIMIT	25	18	18	20	19
PLASTICITY INDEX	48	17	21	42	7
CLASSIFICATION SYMBOL	CH	CL	CL	CH	CL-ML



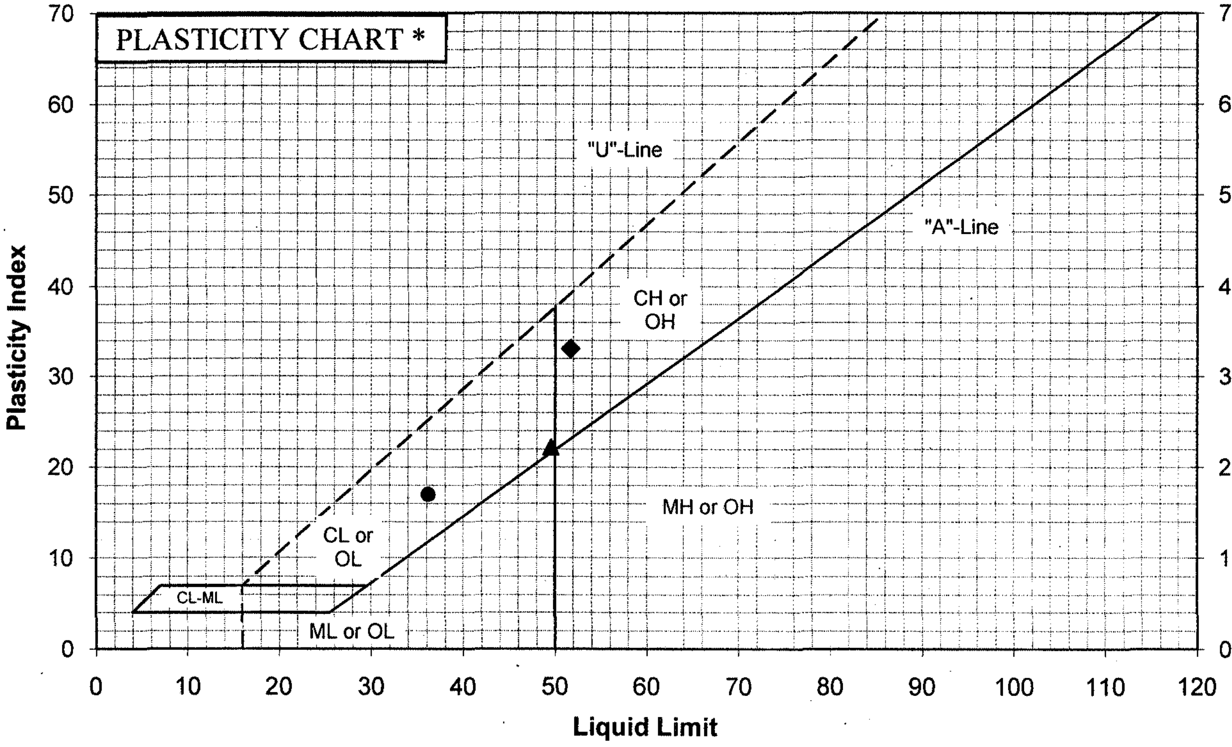
PACIFIC GEOTECHNICAL ENGINEERING

Figure C-1

ATTERBERG LIMITS TEST RESULTS

PROJECT NAME	**SCVWD Stevens Creek Levees Recertification**	PROJECT No.	2227 E

DATE OF TEST	11/5/2008	11/4/2008	11/4/2008		
KEY SYMBOL	♦	▲	●		
DRILL HOLE No.	B2	B3	B4		
DEPTH (ft)	64	15.5	31		
NATURAL WATER CONTENT (%)	27	38	21		
% Retained No. 40 SIEVE (Est.)	0	20	25		
% PASSING No. 200 SIEVE	NA	NA	NA		
LIQUID LIMIT	52	50	36		
PLASTIC LIMIT	19	27	19		
PLASTICITY INDEX	33	22	17		
CLASSIFICATION SYMBOL	CH	CH	CL		

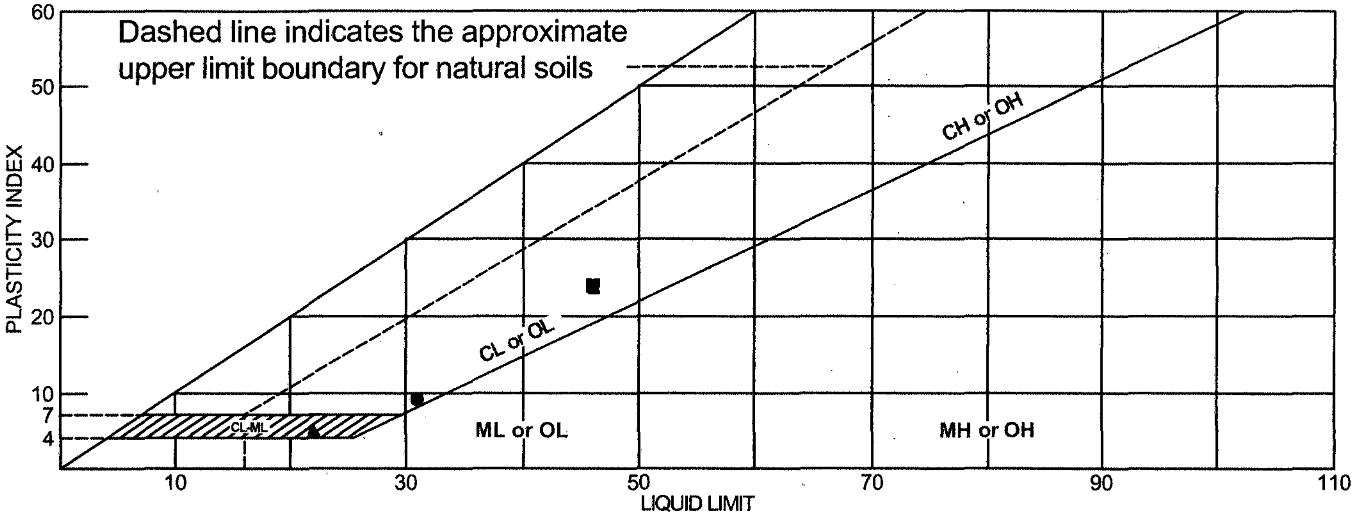


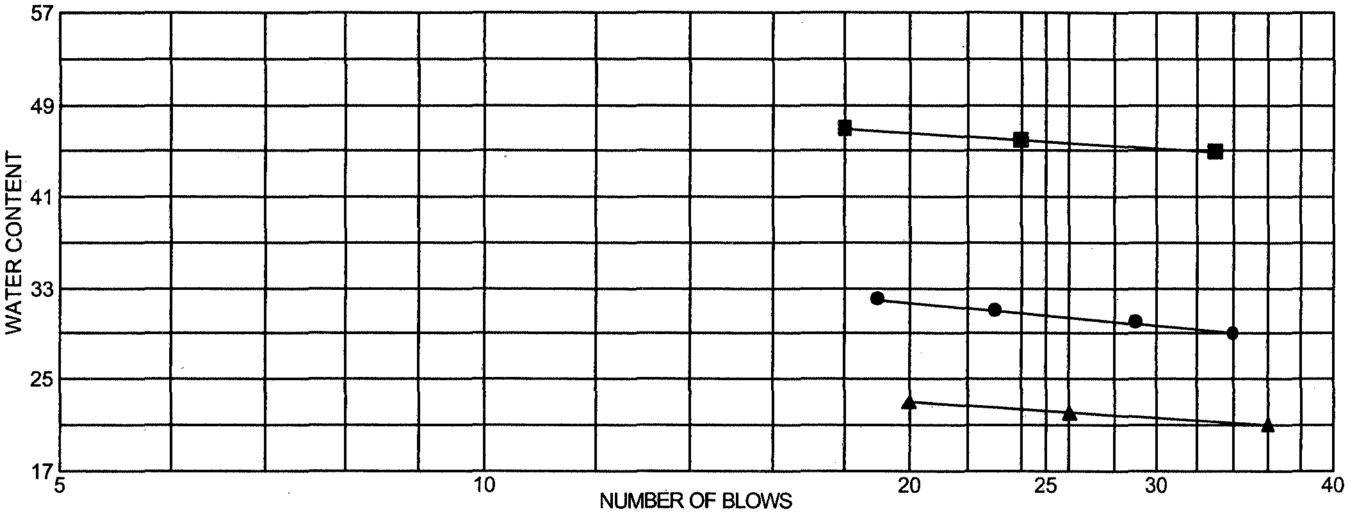
Rev030106

PACIFIC GEOTECHNICAL ENGINEERING

Figure C-2

LIQUID AND PLASTIC LIMITS TEST REPORT





	MATERIAL DESCRIPTION	LL	PL	PI	%<#40	%<#200	USCS
●	Brown Lean CLAY w/ Sand	31	22	9			
■	Grayish Brown Sandy Lean CLAY	46	22	24			
▲	Olive Silty, Clayey SAND	22	17	5	81.4	44.2	SC-SM

Project No. 226-173 **Client:** Pacific Geotechnical Engineering

Project: Stevens Creek Levees Recertification - 2227E

● **Source:** B-2 **Elev./Depth:** 25-27.5'

■ **Source:** B-2 **Elev./Depth:** 45-46'

▲ **Source:** B-4 **Elev./Depth:** 12-13'

Remarks:

●

■

▲

LIQUID AND PLASTIC LIMITS TEST REPORT

COOPER TESTING LABORATORY

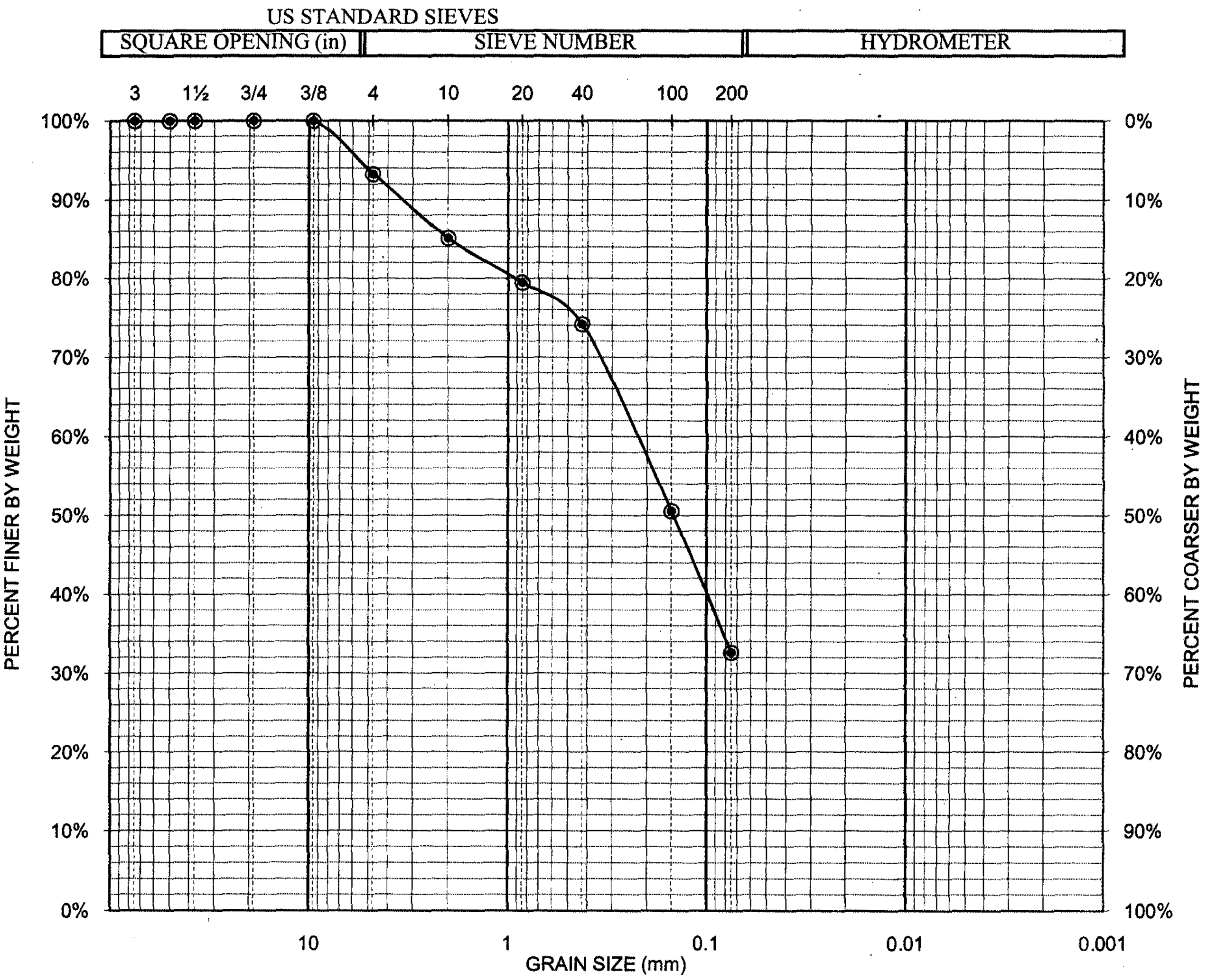
Figure C-3

GRAIN SIZE TEST RESULTS

PROJECT NAME	SCVWD Stevens Creek Levees Recertification					**PROJECT No.**	2227 E
DRILL HOLE No.	B-1	**DEPTH (ft)**	25 - 26	**SAMPLE**	NA	**DATE OF TEST**	11/3/2008

SOURCE/QUARRY:

DESCRIPTION OF SOIL: CLAYEY SAND (SC): Greenish gray (Gley 1 3/1), moist



	GRAVEL		SAND			SILT & CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	
COBBLES	GRAVEL		SAND			SILT & CLAY
	6.7%		60.6%			32.7%

REMARKS:

PACIFIC GEOTECHNICAL ENGINEERING

Figure C-4

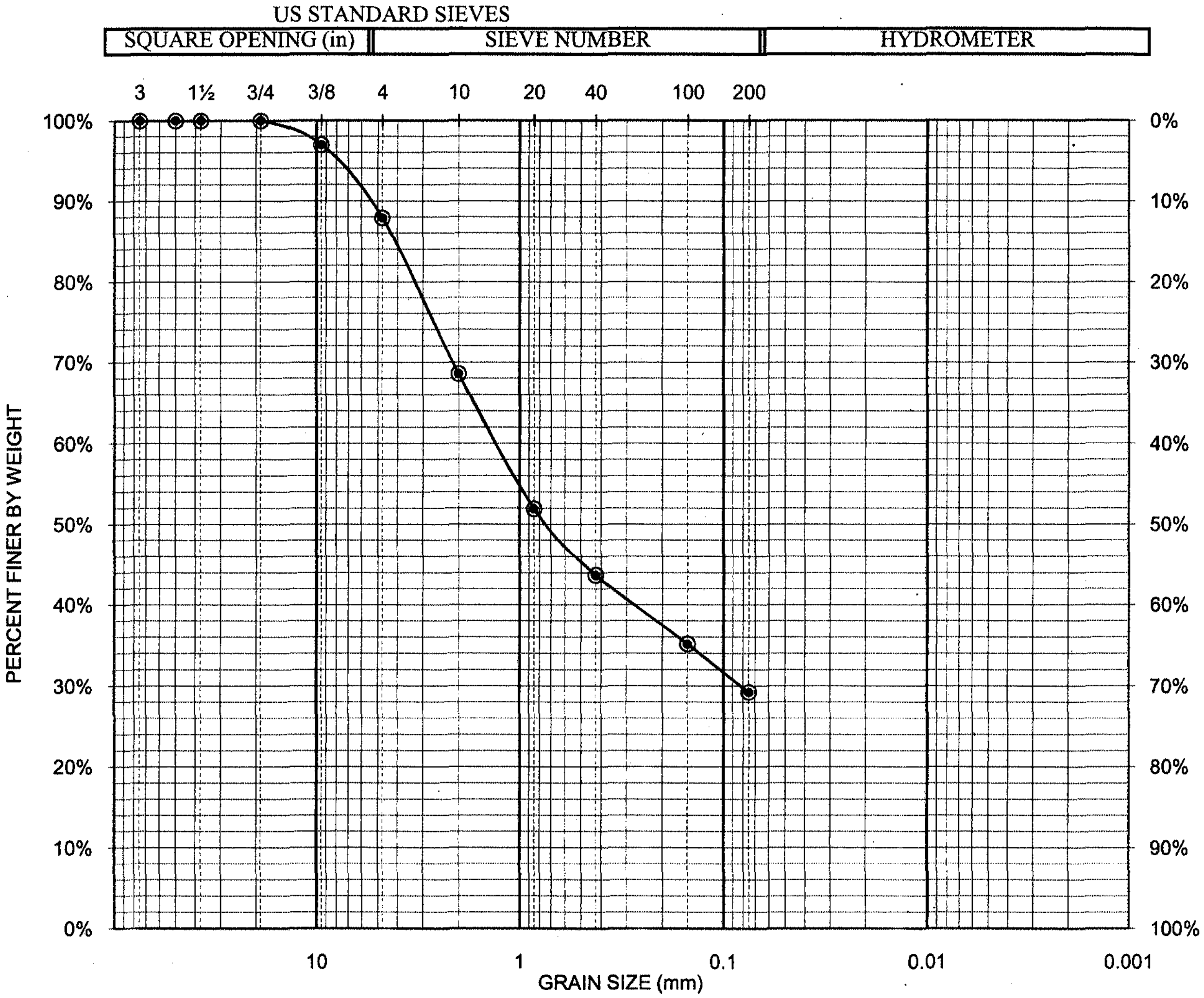
RevOct20070

GRAIN SIZE TEST RESULTS

PROJECT NAME	SCVWD Stevens Creek Levees Recertification					**PROJECT No.**	2227 E
DRILL HOLE No.	B-2	**DEPTH (ft)**	19	**SAMPLE**	NA	**DATE OF TEST**	11/4/2008

SOURCE/QUARRY:

DESCRIPTION OF SOIL: CLAYEY SAND (SC): Dark grayish brown (10YR 4/2), moist to wet



	COARSE	FINE	COARSE	MEDIUM	FINE	
COBBLES	GRAVEL		SAND			SILT & CLAY
	12.1%		58.7%			29.2%

REMARKS:

PACIFIC GEOTECHNICAL ENGINEERING

Figure C-5

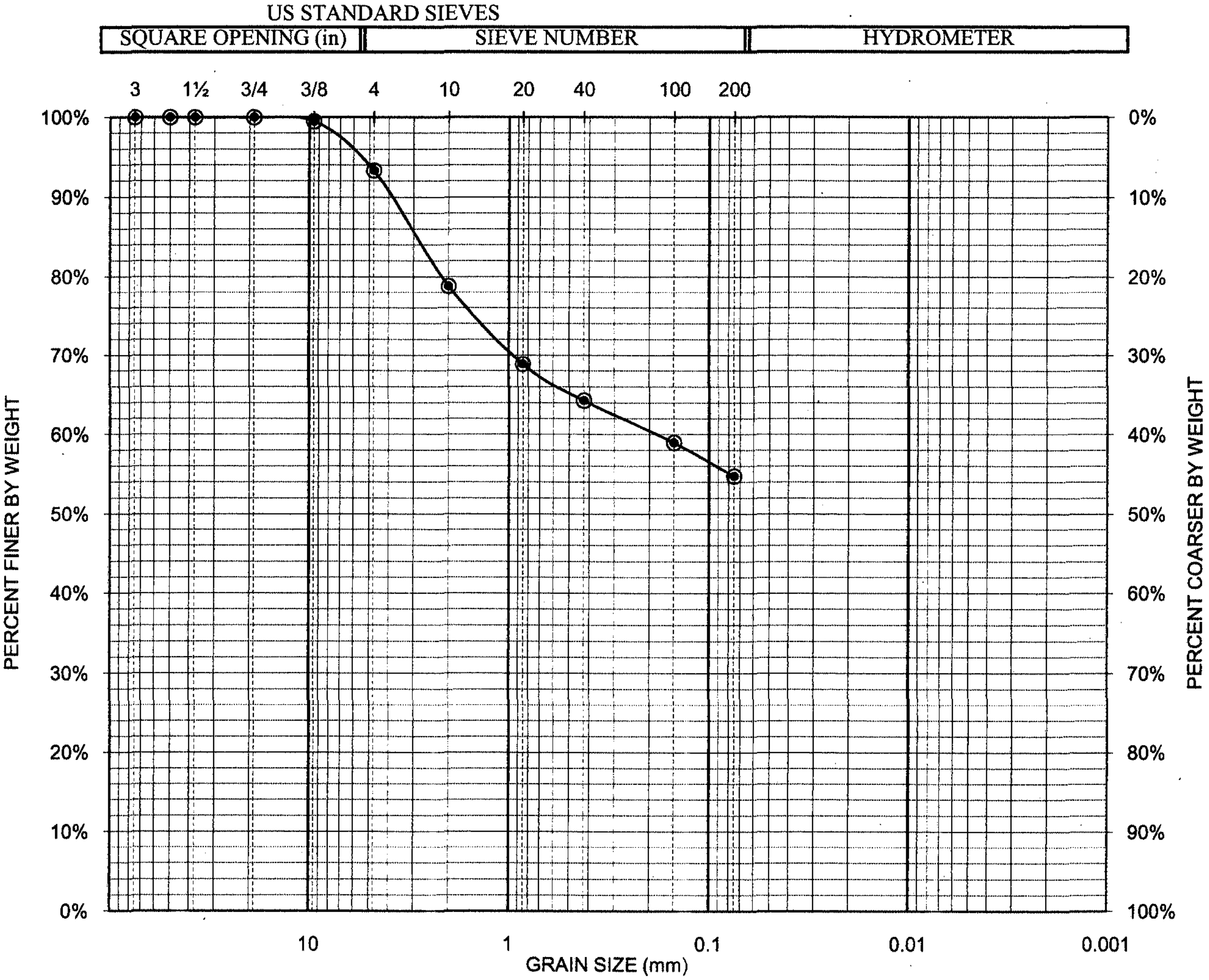
RevOct20070

GRAIN SIZE TEST RESULTS

PROJECT NAME	SCVWD Stevens Creek Levees Recertification					**PROJECT No.**	2227 E
DRILL HOLE No.	B-2	**DEPTH (ft)**	22½	**SAMPLE**	NA	**DATE OF TEST**	11/4/2008

SOURCE/QUARRY: on site

DESCRIPTION OF SOIL: SANDY LEAN CLAY (CL): Grayish brown (2.5Y 5/2), wet



	COARSE	FINE	COARSE	MEDIUM	FINE	
COBBLES	GRAVEL		SAND			SILT & CLAY
	6.7%		38.6%			54.8%

REMARKS:

PACIFIC GEOTECHNICAL ENGINEERING

RevOct20070

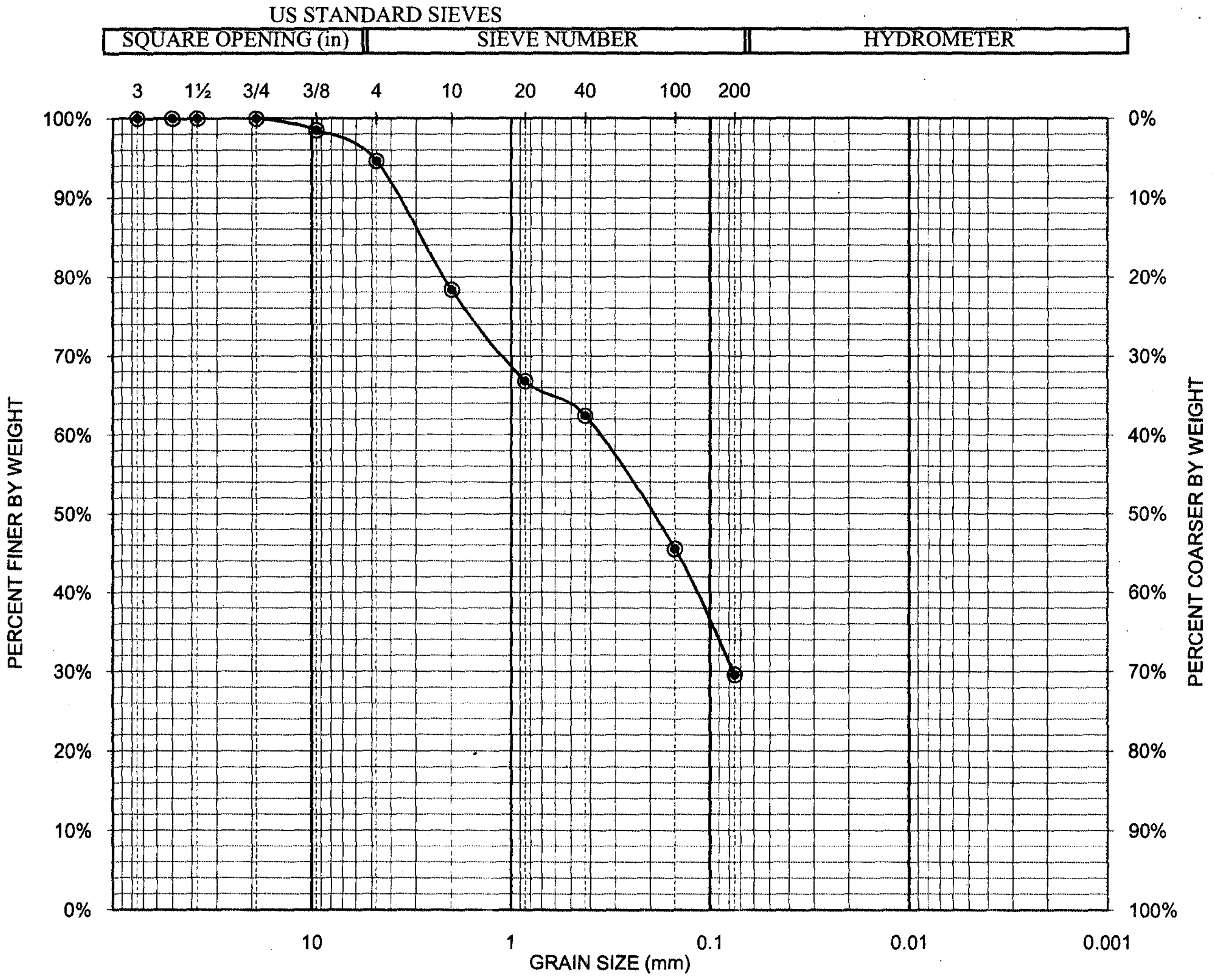
Figure **C-6**

GRAIN SIZE TEST RESULTS

PROJECT NAME	SCVWD Stevens Creek Levees Recertification					**PROJECT No.**	2227 E
DRILL HOLE No.	B-2	**DEPTH (ft)**	29½	**SAMPLE**	NA	**DATE OF TEST**	11/4/2008

SOURCE/QUARRY:

DESCRIPTION OF SOIL: CLAYEY SAND (SC): Grayish brown (2.5Y 5/2) to light olive brown (2.5Y 5/4), moist to wet



	COARSE	FINE	COARSE	MEDIUM	FINE	
COBBLES	GRAVEL		SAND			SILT & CLAY
	5.4%		65.0%			29.6%

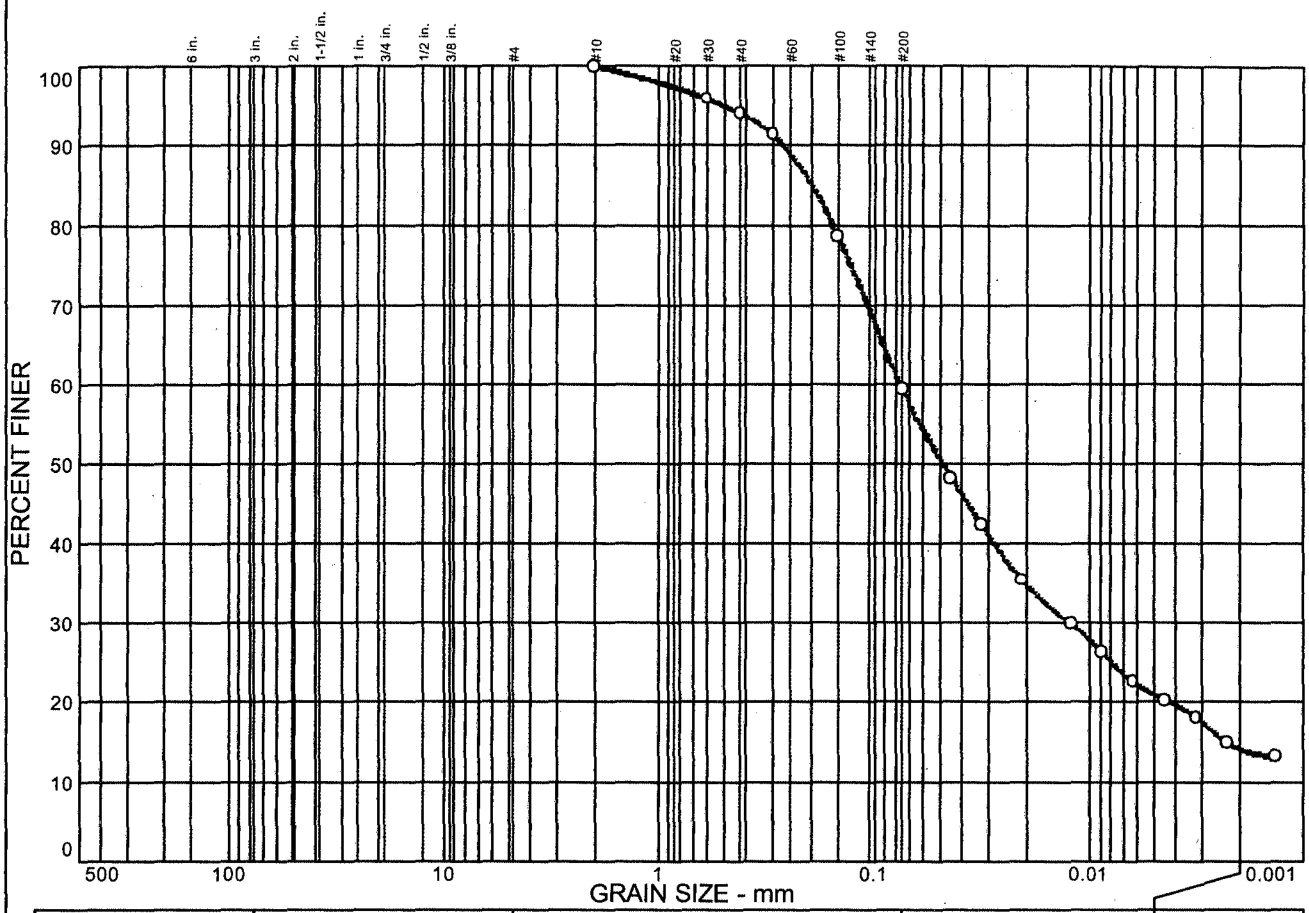
REMARKS:

PACIFIC GEOTECHNICAL ENGINEERING

Figure C-7

RevOct20070

Particle Size Distribution Report



% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY
0.0	0.0	40.7	45.2	14.1

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
#10	100.0		
#30	95.9		
#40	94.1		
#50	91.4		
#100	78.6		
#200	59.3		
0.0445 mm.	48.2		
0.0322 mm.	42.3		
0.0209 mm.	35.4		
0.0123 mm.	29.9		
0.0088 mm.	26.3		
0.0063 mm.	22.6		
0.0045 mm.	20.3		
0.0032 mm.	18.1		
0.0023 mm.	14.9		
0.0014 mm.	13.1		

* (no specification provided)

Soil Description

Olive Sandy CLAY

Atterberg Limits

PL= LL= PI=

Coefficients

D_{85}= 0.198 D_{60}= 0.0771 D_{50}= 0.0489
D_{30}= 0.0124 D_{15}= 0.0023 D_{10}=
C_u= C_c=

Classification

USCS= AASHTO=

Remarks

Sample No.: **Source of Sample:** B-2 **Date:**
Location: **Elev./Depth:** 33.5-34.5'

COOPER TESTING LABORATORY

Client: Pacific Geotechnical Engineering
Project: Stevens Creek Levees Recertification - 2227E

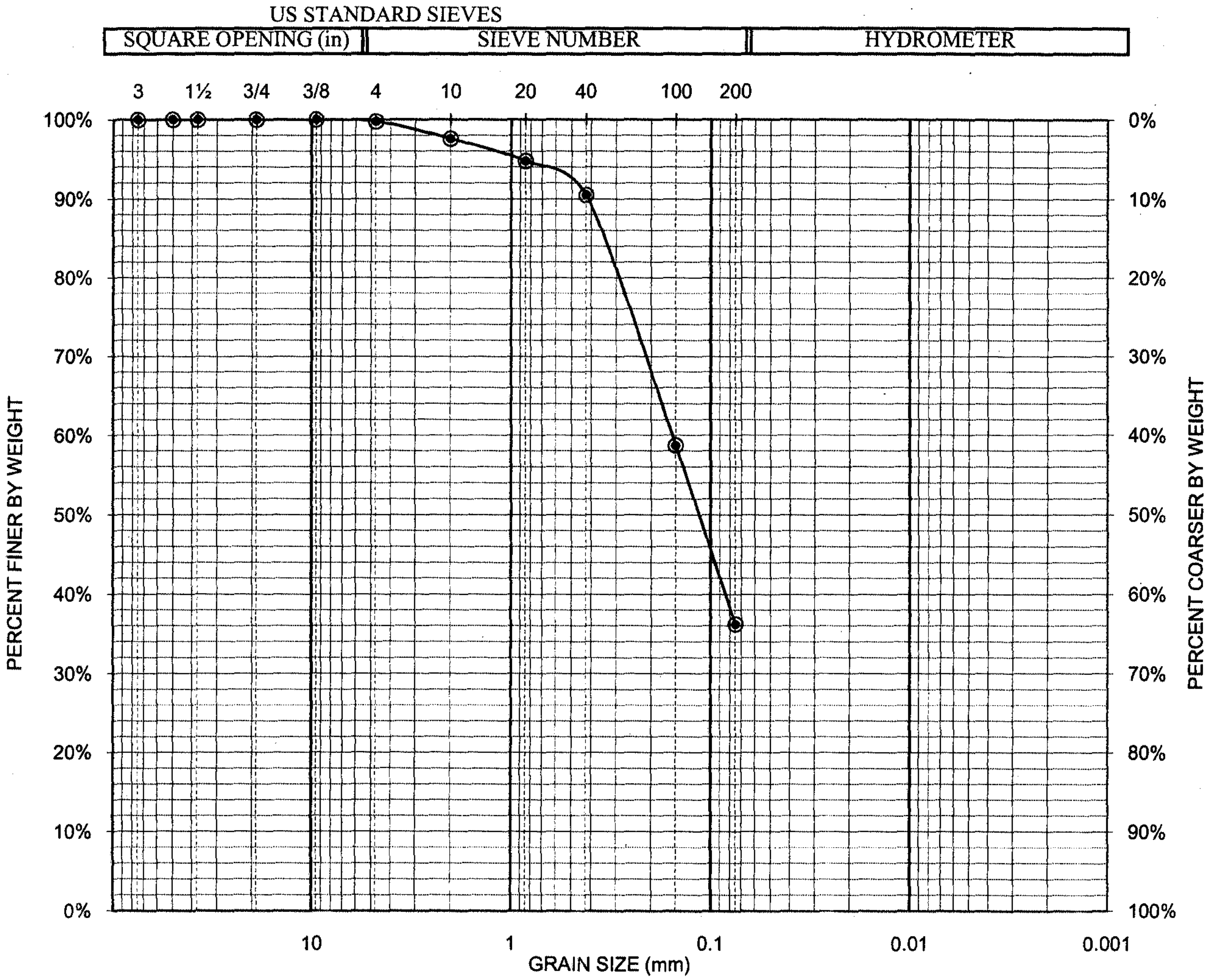
Project No: 226-173 **Figure** C-8

GRAIN SIZE TEST RESULTS

PROJECT NAME	SCVWD Stevens Creek Levees Recertification					**PROJECT No.**	2227 E
DRILL HOLE No.	B-3	**DEPTH (ft)**	31	**SAMPLE**	NA	**DATE OF TEST**	11/3/2008

SOURCE/QUARRY:

DESCRIPTION OF SOIL: CLAYEY SAND (SC): Olive brown (2.5YR 4/3), moist



	COARSE	FINE	COARSE	MEDIUM	FINE	
COBBLES	GRAVEL		SAND			SILT & CLAY
	0.2%		63.5%			36.2%

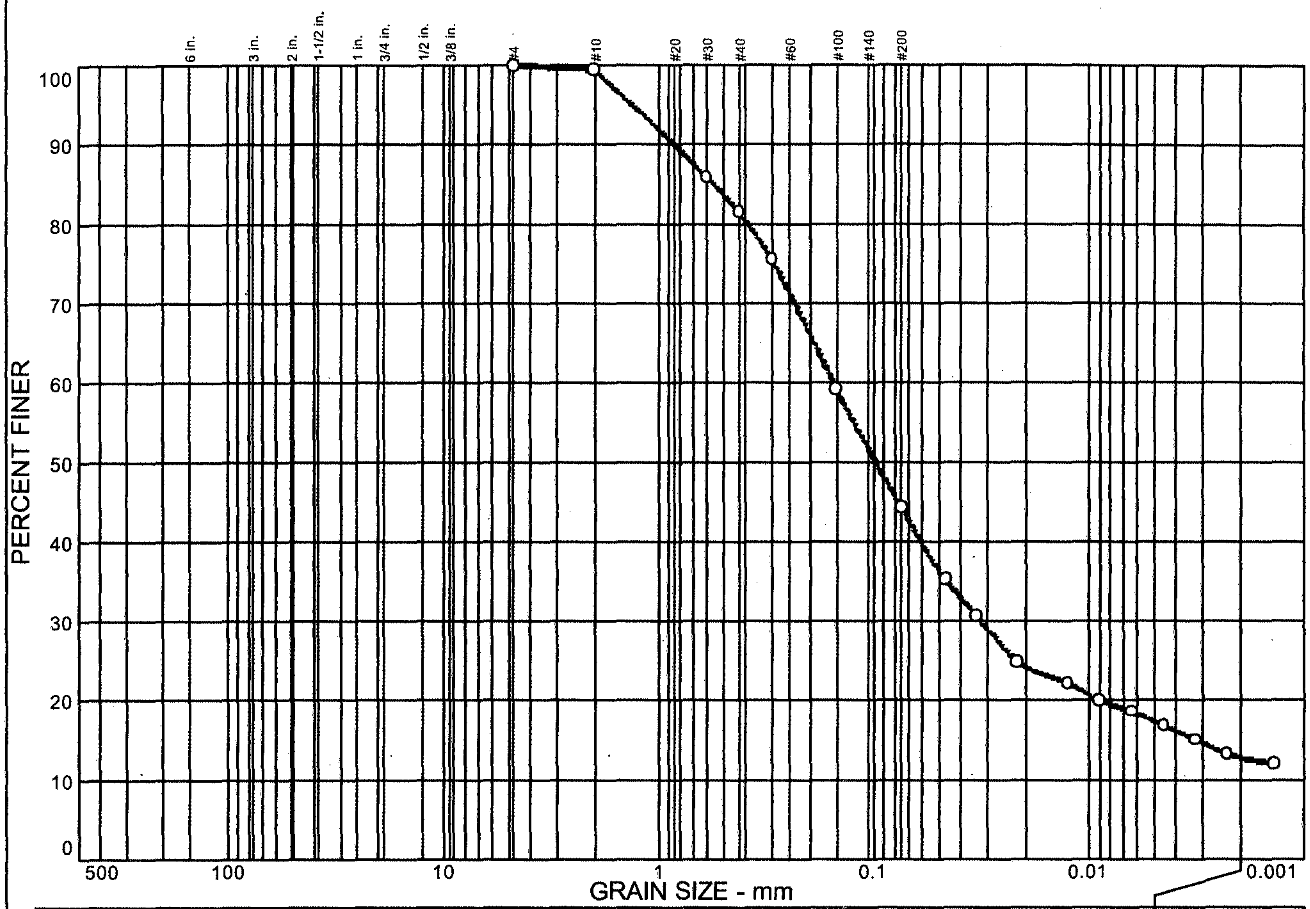
REMARKS:

PACIFIC GEOTECHNICAL ENGINEERING

Figure C-9

RevOct20070

Particle Size Distribution Report



% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY
0.0	0.0	55.8	31.5	12.7

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
#4	100.0		
#10	99.5		
#30	85.9		
#40	81.4		
#50	75.3		
#100	59.1		
#200	44.2		
0.0466 mm.	35.2		
0.0335 mm.	30.7		
0.0216 mm.	24.9		
0.0126 mm.	22.2		
0.0090 mm.	20.0		
0.0064 mm.	18.6		
0.0045 mm.	16.8		
0.0032 mm.	15.0		
0.0023 mm.	13.2		
0.0014 mm.	12.0		

* (no specification provided)

Soil Description

Olive Silty, Clayey SAND

Atterberg Limits

PL= 17 LL= 22 PI= 5

Coefficients

D_{85}= 0.557 D_{60}= 0.156 D_{50}= 0.0992
D_{30}= 0.0319 D_{15}= 0.0032 D_{10}=
C_u= C_c=

Classification

USCS= SC-SM AASHTO=

Remarks

Sample No.: **Source of Sample:** B-4 **Date:**
Location: **Elev./Depth:** 12-13'

COOPER TESTING LABORATORY

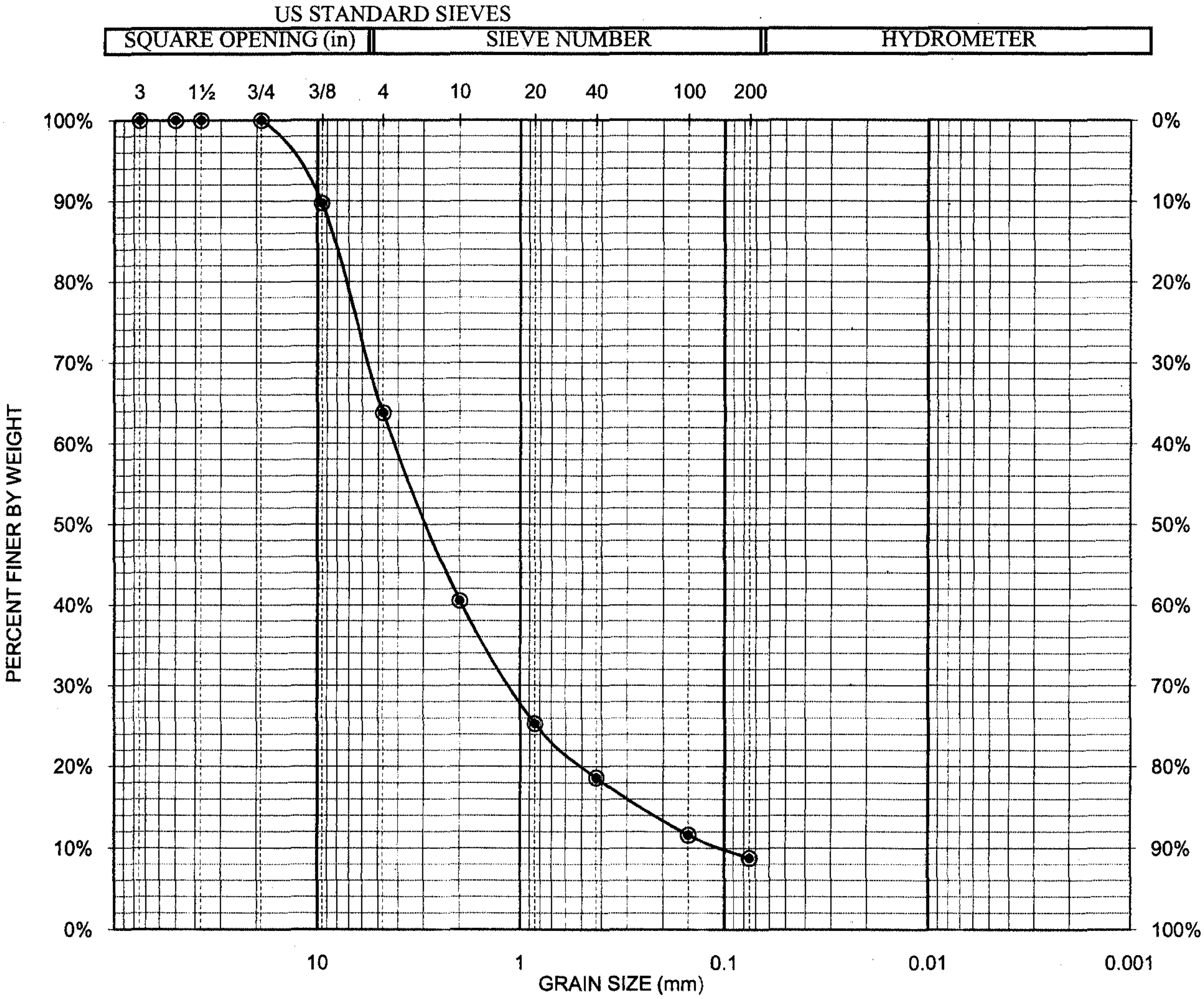
Client: Pacific Geotechnical Engineering
Project: Stevens Creek Levees Recertification - 2227E
Project No: 226-173 **Figure** C-10

GRAIN SIZE TEST RESULTS

PROJECT NAME	SCVWD Stevens Creek Levees Recertification					**PROJECT No.**	2227 E
DRILL HOLE No.	B-4	**DEPTH (ft)**	25½	**SAMPLE**	NA	**DATE OF TEST**	11/4/2008

SOURCE/QUARRY:

DESCRIPTION OF SOIL: WELL GRADED SAND with GRAVEL and CLAY (SW/SC): Dark yellowish brown (10YR 3/4 to 4/6), wet



	COARSE	FINE	COARSE	MEDIUM	FINE	
COBBLES	GRAVEL		SAND			SILT & CLAY
	36.2%		55.0%			8.8%

REMARKS:

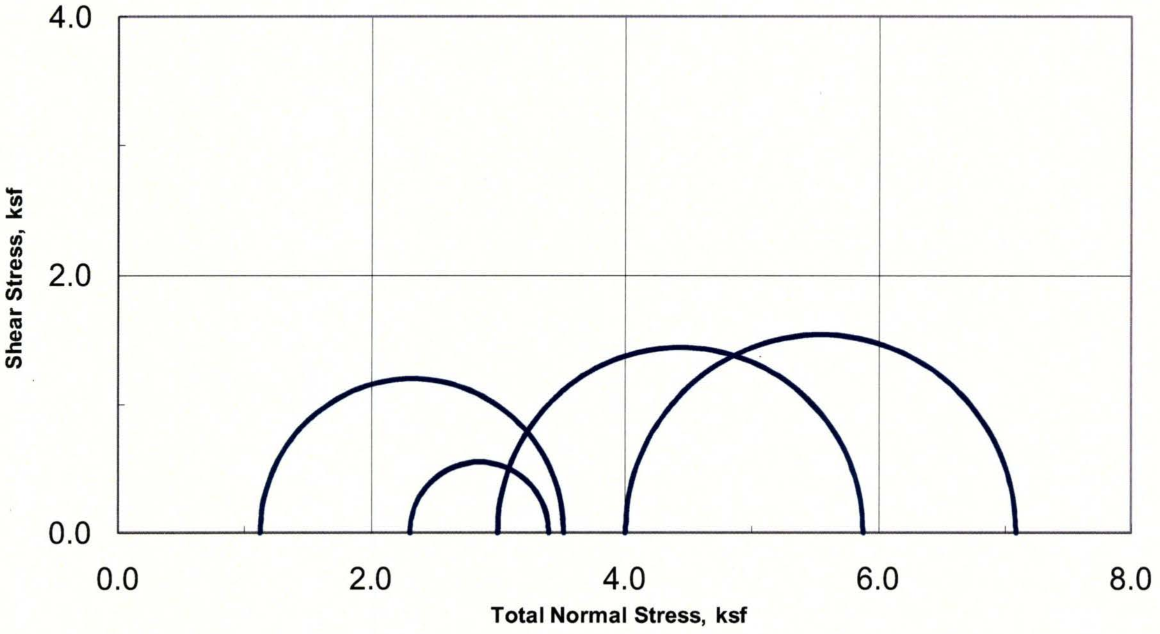
PACIFIC GEOTECHNICAL ENGINEERING **Figure C-11**

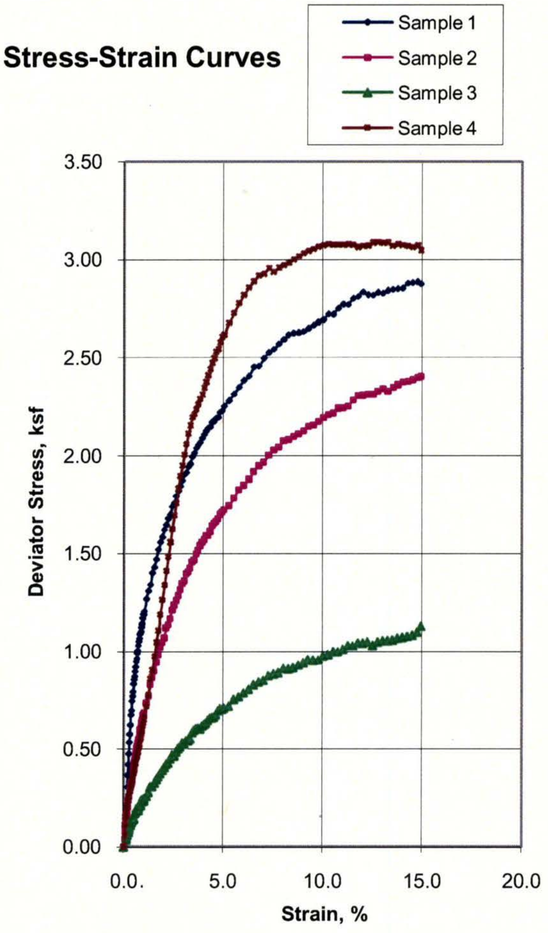
RevOct20070

COOPER
TESTING LABORATORY

Unconsolidated-Undrained Triaxial Test

ASTM D-2850




Stress-Strain Curves

Sample Data				
	1	2	3	4
Moisture %	24.8	32.2	36.7	26.4
Dry Den,pcf	100.8	90.1	84.6	98.4
Void Ratio	0.671	0.870	0.991	0.713
Saturation %	99.9	99.9	99.9	99.8
Height in	5.03	5.03	5.00	5.99
Diameter in	2.44	2.44	2.42	2.89
Cell psi	20.8	7.8	16.0	27.8
Strain %	14.80	14.80	14.90	13.30
Deviator, ksf	2.886	2.402	1.127	3.087
Rate %/min	0.99	0.99	1.00	1.00
in/min	0.050	0.050	0.050	0.060
Job No.:	**226-173a**			
Client:	**Pacific Geotechnical Engineering**			
Project:	**Stevens Creek Levees - 2227E**			
Boring:	B-1	B-2	B-2	B-2
Sample:				
Depth ft:	28.5	9	18.5	45-46

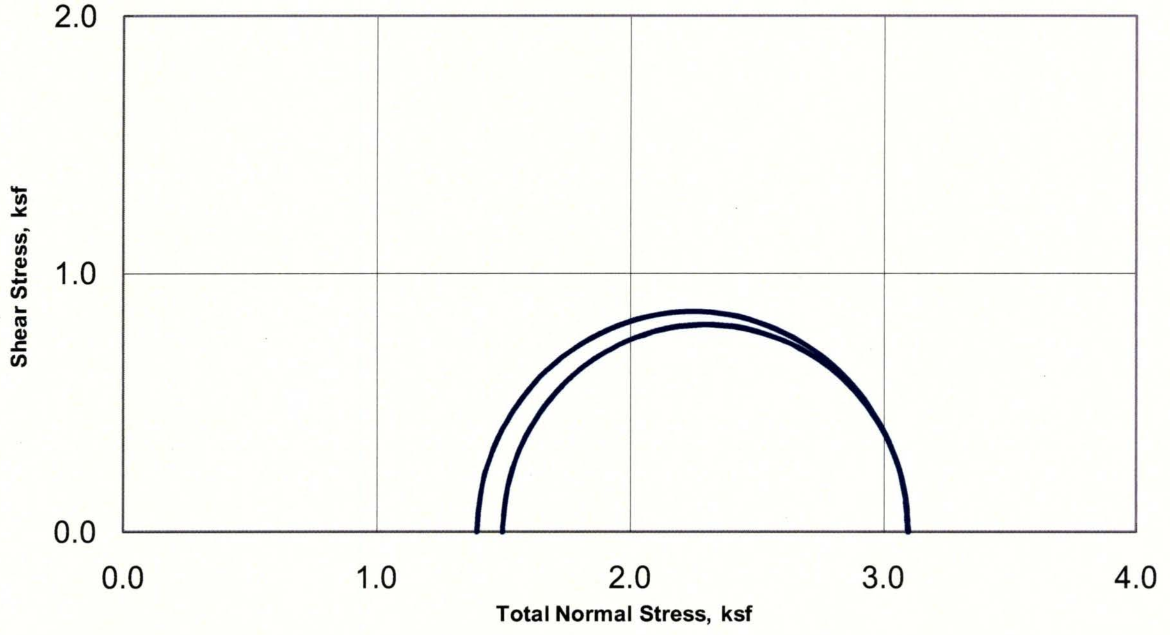
Visual Soil Description	
Sample #	
1	Gray Sandy CLAY
2	Brown CLAY
3	Gray CLAY, trace Sand
4	Grayish Brown Sandy Lean CLAY

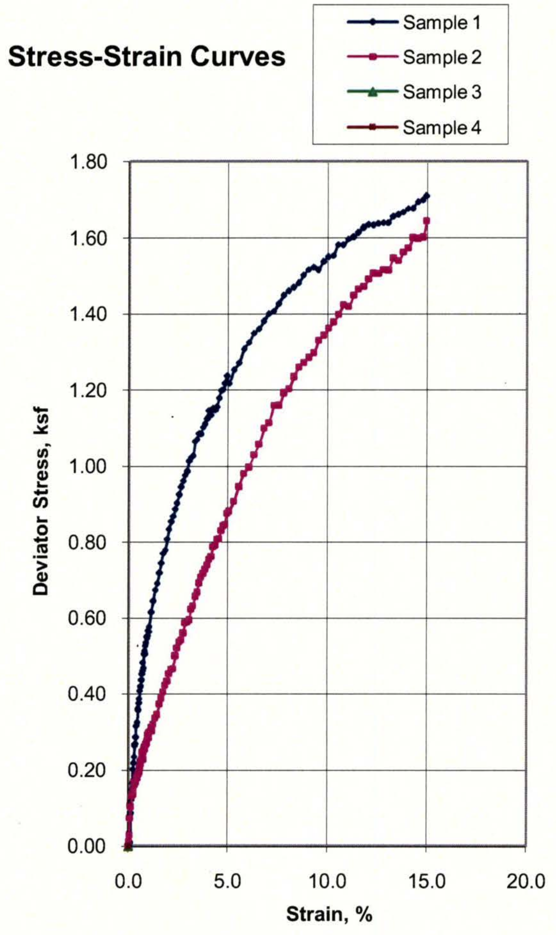
Remarks:

Figure C-12

COOPER
TESTING LABORATORY

Unconsolidated-Undrained Triaxial Test
ASTM D-2850





Sample Data				
	1	2	3	4
Moisture %	35.9	27.7		
Dry Den,pcf	85.3	96.3		
Void Ratio	0.977	0.751		
Saturation %	99.2	99.6		
Height in	5.02	5.01		
Diameter in	2.42	2.41		
Cell psi	9.7	10.4		
Strain %	14.90	14.90		
Deviator, ksf	1.710	1.642		
Rate %/min	1.00	1.00		
in/min	0.050	0.050		
Job No.:	**226-173b**			
Client:	**Pacific Geotechnical Engineering**			
Project:	**Stevens Creek Levees - 2227E**			
Boring:	B-3	B-4		
Sample:				
Depth ft:	16	16		

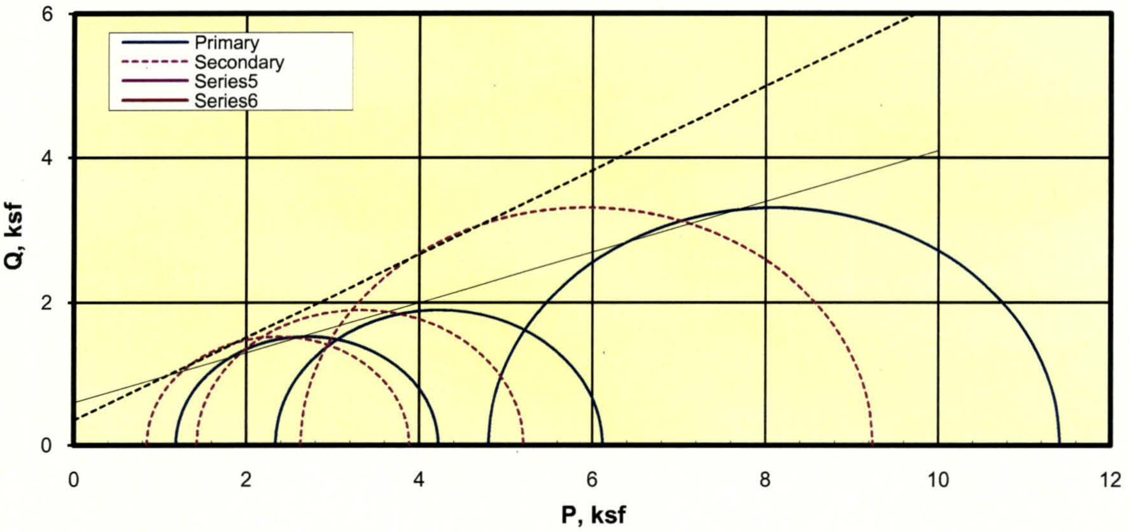
Visual Soil Description

Sample #	
1	Brown CLAY
2	Brown CLAY w/ Sand & nodules (Silty)
3	
4	

Remarks:

Figure C-13

Summary of Triaxial Compression Data

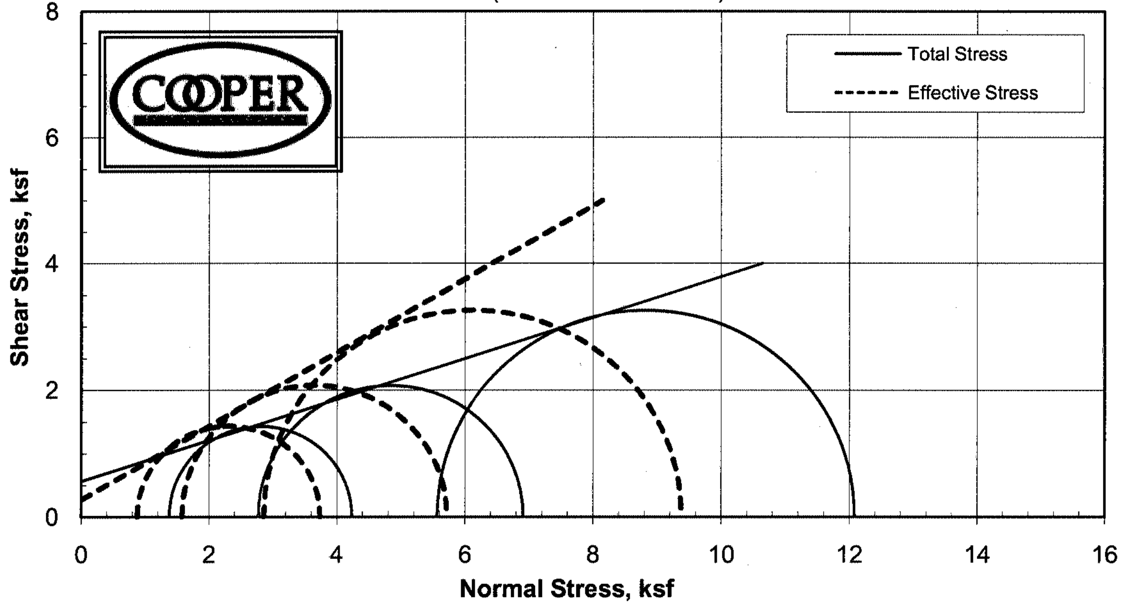


Total phi:	**19.3**	**Total C, ksf:**		**0.6**	**Eff. phi:**	**30.1**	**Eff. C, ksf:**	**0.35**
Sample:	1	2	3	4	5	6	7	8
Sample No.:	**1 @ 19.5'** **(stage 1)**	**1 @ 19.5'** **(stage 2)**	**1 @ 19.5'** **not staged**					
	Initial Moisture Density							
MC, %	25.0	25.0	26.7					
DD, pcf	98.9	98.9	97.2					
Sat. %	96.2	96.2	98.2					
Void Ratio	0.703	0.703	0.734					
Diameter, in	2.88	2.88	2.86					
Height, in	6.00	6.00	6.00					
	Final Moisture-Density Data							
MC, %	24.5	23.1	26.5					
DD, pcf	101.0	103.4	98.2					
Saturation %	100.0	100.0	100.0					
Void Ratio	0.662	0.624	0.716					
Diameter, in	2.86	2.87	2.85					
Height, in	5.95	5.75	5.96					
Cell, psi	55.1	71.8	46.8					
BP, psi	38.9	38.5	38.6					
	Effective Stresses At:							
Strain, %	5.0	5.0	5.0					
Deviator, ksf	3.785	6.619	3.040					
Excess PP, ksf	0.91	2.17	0.34					
Sigma 1, ksf	5.206	9.242	3.885					
Sigma 3, ksf	1.421	2.623	0.845					
P, ksf	3.314	5.933	2.365					
Q, ksf	1.892	3.310	1.520					
Stress Ratio	3.663	3.523	4.596					
Rate, in/min	0.001	0.001	0.001					
Client Name:	Pacific Geotechnical Eng.			**Job No.:**	2227E		**CTL No.:**	226-173b

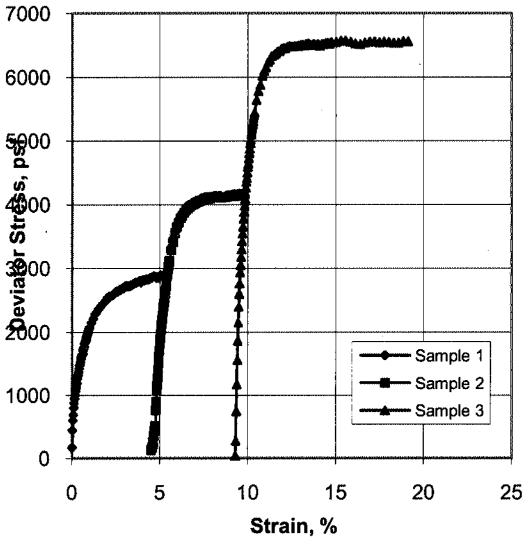
Figure C-14

Triaxial Consolidated Undrained

(ASTM D4767 modified)



Stress-Strain Response



Stage	1	2	3
MC, %	28.7		
Dry Dens., pcf.	94.9		
Sat. %	99.9		
Void Ratio	0.776		
Diameter in	2.86		
Height, in	6.00		
		Final	
MC, %	30.2	29.1	27.5
Dry Dens., pcf.	96.2	97.9	100.4
Sat. %	100.0	100.0	100.0
Void Ratio	0.815	0.785	0.742
Diameter, in	2.85	2.88	2.90
Height, in	5.96	5.75	5.51
Cell, psi	48.2	57.9	77.4
BP, psi	38.7	38.7	38.8
		Effective Stresses At:	
Strain, %	5.0	5.0	5.0
Deviator ksf	2.860	4.143	6.526
Excess PP	0.497	1.191	2.705
Sigma 1	3.735	5.717	9.380
Sigma 3	0.874	1.574	2.853
P, ksf	2.304	3.646	6.116
Q, ksf	1.430	2.072	3.263
Stress Ratio	4.272	3.633	3.287
Rate in/min	0.001	0.001	0.001

Total C	0.57	Effective C	0.27
Total Phi	17.9	Effective Phi	30.2

Figure C-15

Job No.: 226-173 **Date:** 10/29/2008

Client: Pacific Geotechnical Eng. BY:DC

Project: 2227E

Sample: B-2 @ 25 (Tip-9.5") Brown Lean CLAY w/ Sand

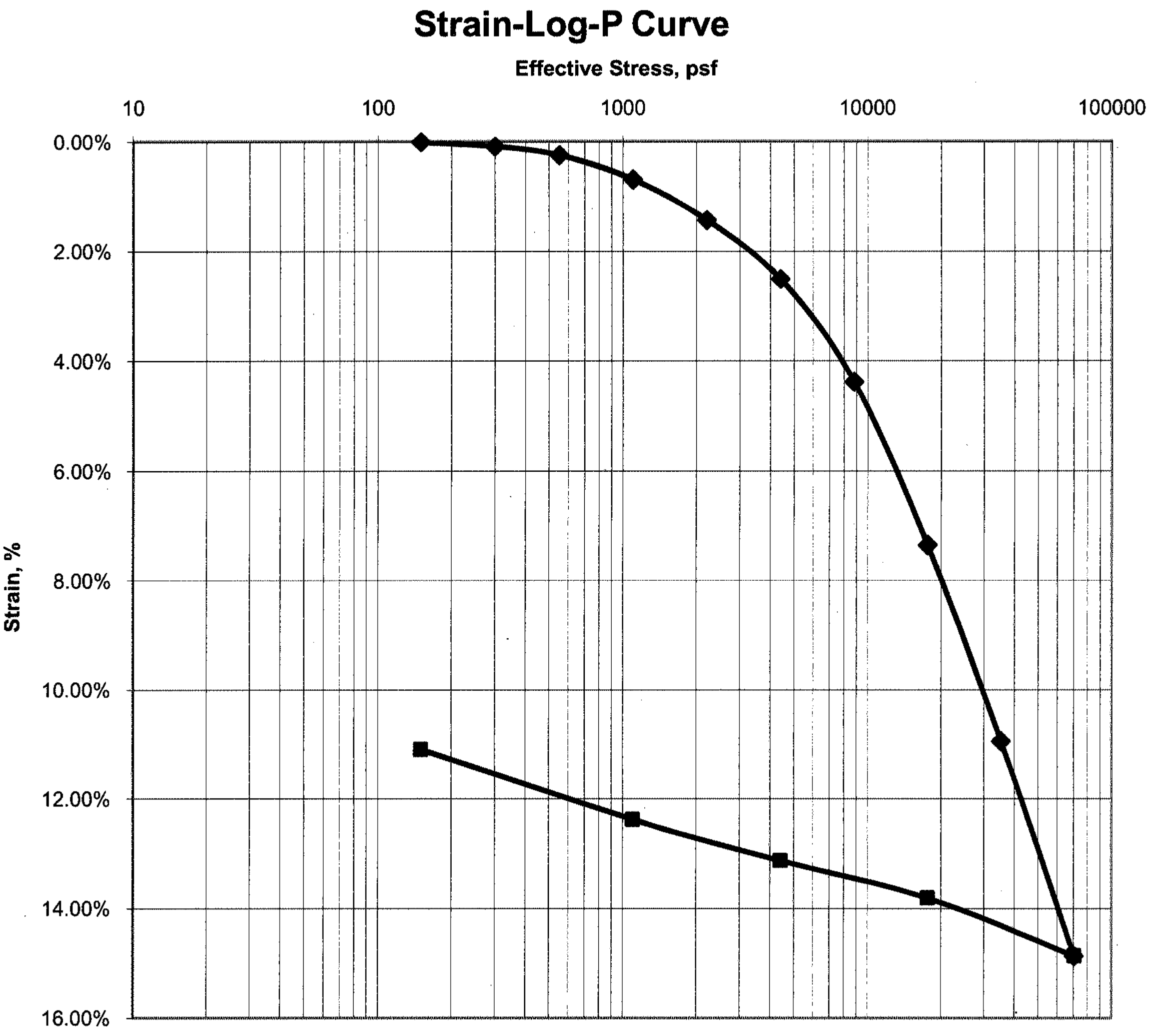
Remarks: ** Staged Test ** Strengths at 5% strain.

COOPER

Consolidation Test

ASTM D2435

Job No.:	226-173	**Boring:**	B-1	**Run By:**	MD
Client:	Pacific Geotechnical Eng	**Sample:**		**Reduced:**	PJ
Project:	2227E	**Depth, ft.:**	19.5-21	**Checked:**	PJ/DC
Soil Type:	Greenish Gray CLAY w/ Sand (Very Silty)			**Date:**	11/3/2008



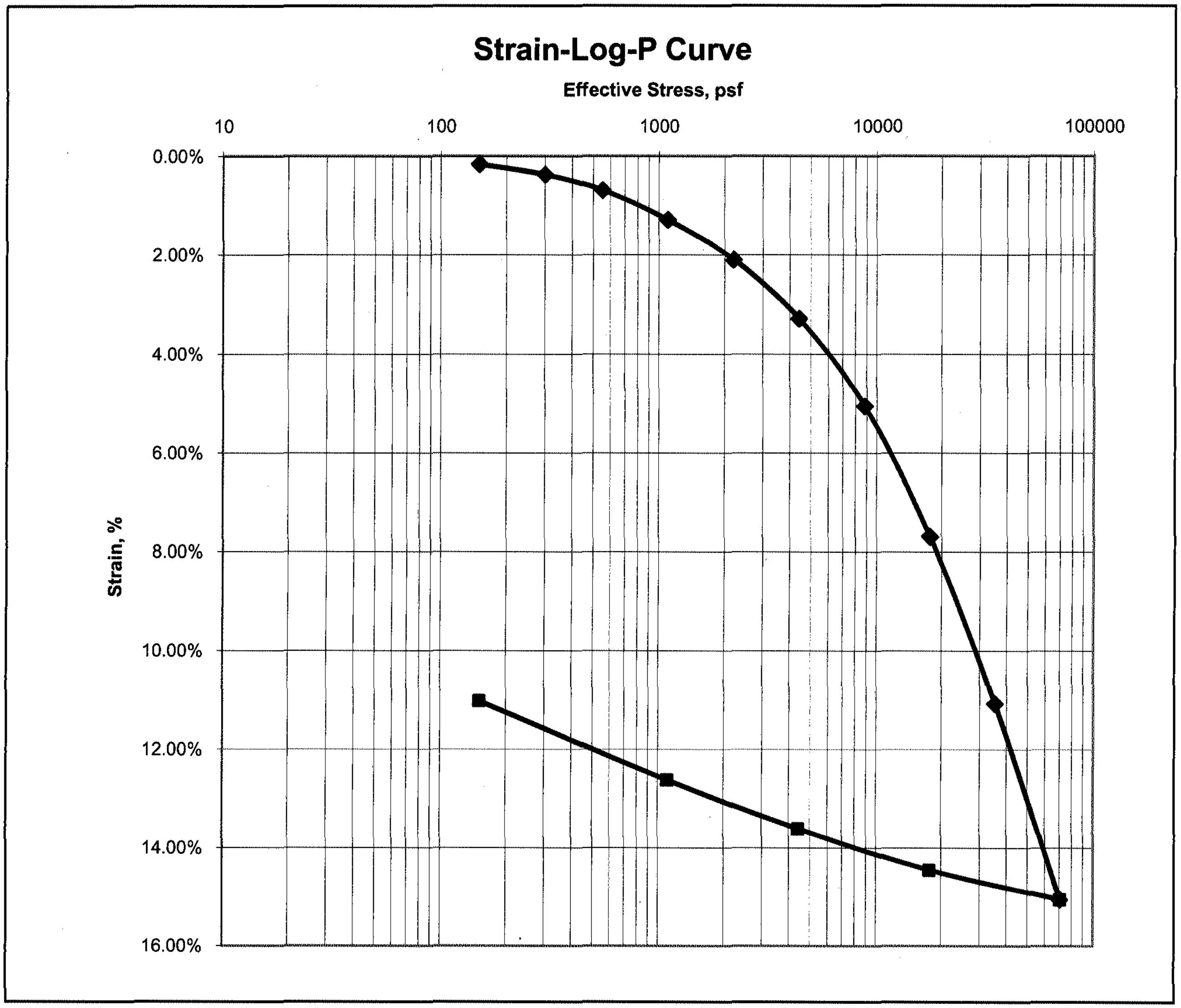
Ass. Gs = 2.7	**Initial**	**Final**
Moisture %:	30.2	22.3
Dry Density, pcf:	92.7	105.4
Void Ratio:	0.819	0.600
% Saturation:	99.6	100

Remarks:

Figure C-16

Consolidation Test
ASTM D2435

Job No.:	226-173	**Boring:**	B-2	**Run By:**	MD
Client:	Pacific Geotechnical Eng	**Sample:**		**Reduced:**	PJ
Project:	2227E	**Depth, ft.:**	25-27.5	**Checked:**	PJ/DC
Soil Type:	Brown Lean CLAY w/ Sand			**Date:**	11/3/2008



Ass. Gs = 2.8	Initial	Final
Moisture %:	26.6	23.1
Dry Density, pcf:	95.7	106.2
Void Ratio:	0.826	0.645
% Saturation:	90.1	100

Remarks:

Figure C-17

APPENDIX D

LETTER ON EVALUATION OF DRILLING SPOILS

PACIFIC
GEOTECHNICAL
ENGINEERING

16055-D Caputo Drive, Morgan Hill, CA 95037
(408) 778-2818 • FAX (408) 779-6879
info@pacific-geotechnical.com

September 26, 2008
Project 2227E

Charles Anderson
SCHAAF & WHEELER
100 N. Winchester Blvd, Suite 200
Santa Clara, California 95050

Subject: **Evaluation of Drilling Spoils for Potential Contamination**
Stevens Creek Levees FEMA Recertification Project
Mountain View, California
Schaaf & Wheeler Task Order SCWD.18.08-002 B5

Dear Mr. Anderson:

As commissioned, Pacific Geotechnical Engineering (PGE) recently conducted geotechnical subsurface exploration work along the east and west levees of Stevens Creek between Highway 101 and Crittenden Lane. The drilling spoils were drummed and transported to a temporary storage yard in Milpitas at the conclusion of the two field days. Four individual soil samples were collected from the set of drums by the undersigned environmental Engineer and immediately transferred to nearby Torrent Laboratory, Inc. using standard chain-of-custody procedures. The state-certified laboratory tested a composite of the 4-point sample for the CAM 17 group of metals, pesticides (EPA 8081 suite), and petroleum hydrocarbons (i.e., gasoline, BTEX, MTBE, diesel and motor oil). Upon finding total chromium above 50 mg/kg, the trigger concentration that local landfills use to require soluble chromium testing, Torrent re-analyzed the composite for STLC/WET chromium.

Attached is Torrent's Certified Analytical Report for the subject spoils. No pesticides or petroleum materials were detected. Eleven of the CAM 17 metals were detected, but based on the undersigned environmental Engineer's 20+ years of local experience, all of these reported metal concentrations are fully consistent with the typical background levels that are present naturally in Bay Area soils. Further, all concentrations, including the trace of soluble chromium, are also well below thresholds for classification as California hazardous waste.

Accordingly, Integrated Wastestream Management (IWM) is planning to transport and dispose of the material as non-hazardous waste at a local landfill facility. A copy of the documentation concerning that disposal will be forwarded to you upon receipt of the original at PGE.

The conclusions and opinions expressed herein are based solely upon the cited analytical data. PGE is not responsible for possible errors in laboratory analyses and reporting. Further, any such laboratory analyses are necessarily limited and inherently do not provide a warranty as to the conditions that exist throughout all the drummed material. PGE has performed its services in a manner consistent with standards of care and skill ordinarily exercised by members of the environmental consulting profession practicing under similar conditions and timeframes in the San Francisco Bay area. We provide no warranties, express or implied.

If there are any questions regarding this evaluation or letter, please contact our office.

Prepared by,

PACIFIC GEOTECHNICAL ENGINEERING

Eric R. Lautenbach, PE
Senior Environmental Engineer

Chalerm (Beeson) Liang, GE
Project Manager

Attachment: Torrent Laboratory Report

REGISTERED PROFESSIONAL ENGINEER
ERIC R. LAUTENBACH
9/29/08
No. C042437
EXP. 3/31/10
CIVIL
STATE OF CALIFORNIA

Torrent
LABORATORY, INC.

September 29, 2008(Revised)

Eric Lautenbach
Pacific Geotechnical Engineering
16055-D Caputo Drive
Morgan Hill, CA 95037
TEL: (408) 778-2818
FAX (408) 779-6879

RE: 2227E

Order No.: 0809108

Dear Eric Lautenbach:

Torrent Laboratory, Inc. received 4 samples on 9/16/2008 for the analyses presented in the following report.

All data for associated QC met EPA or laboratory specification(s) except where noted in the case narrative.
Reported data is applicable for only the samples received as part of the order number referenced above.

Torrent Laboratory, Inc, is certified by the State of California, ELAP #1991. If you have any questions regarding these tests results, please feel free to contact the Project Management Team at (408)263-5258;ext: 204.

Sincerely,

9/29/08

Laboratory Director Date

Torrent Laboratory, Inc. **Date:** *23-Sep-08*

CLIENT: Pacific Geotechnical Engineering
Project: 2227E
Lab Order: 0809108

CASE NARRATIVE

Note: Extraction of 50 g sample / 500g 0.2M Sodium Citrate Solution was performed according to wet extraction procedure (WET) which was rotated in a rotary shaker for 48 hours.

Date Prepared: Start on 09/18/2008 @ 3:00 P.M.and End on 09/20/2008 @ 3:00 P.M

TORRENT LABORATORY, INC.

483 Sinclair Frontage Road • Milpitas, CA • Phone: (408) 263-5258 • Fax: (408) 263-8293

Visit us at www.torrentlab.com email: analysis@torrentlab.com

Report prepared for: Eric Lautenbach
Pacific Geotechnical Engineering

Date Received: 9/16/2008
Date Reported: 9/23/2008

Client Sample ID: Comp B-3(A-D)
Sample Location: Stevens Creek Levee
Sample Matrix: SOIL
Date/Time Sampled 9/16/2008

Lab Sample ID: 0809108-005
Date Prepared: 9/17/2008

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Chromium (STLC)	6010B (STLC)	9/22/2008	0.1	1	0.100	0.190	mg/L	4612
Antimony	SW6010B	9/17/2008	5	1	5.0	5.6	mg/Kg	4596
Arsenic	SW6010B	9/17/2008	1.7	1	1.7	2.0	mg/Kg	4596
Barium	SW6010B	9/17/2008	5	1	5.0	110	mg/Kg	4596
Beryllium	SW6010B	9/17/2008	2	1	2.0	ND	mg/Kg	4596
Cadmium	SW6010B	9/17/2008	1	1	1.0	ND	mg/Kg	4596
Chromium	SW6010B	9/17/2008	5	1	5.0	80	mg/Kg	4596
Cobalt	SW6010B	9/17/2008	5	1	5.0	15	mg/Kg	4596
Copper	SW6010B	9/17/2008	5	1	5.0	35	mg/Kg	4596
Lead	SW6010B	9/17/2008	1	1	1.0	3.4	mg/Kg	4596
Molybdenum	SW6010B	9/17/2008	5	1	5.0	ND	mg/Kg	4596
Nickel	SW6010B	9/17/2008	5	1	5.0	65	mg/Kg	4596
Selenium	SW6010B	9/17/2008	5	1	5.0	ND	mg/Kg	4596
Silver	SW6010B	9/17/2008	1	1	1.0	3.8	mg/Kg	4596
Thallium	SW6010B	9/17/2008	5	1	5.0	ND	mg/Kg	4596
Vanadium	SW6010B	9/17/2008	5	1	5.0	55	mg/Kg	4596
Zinc	SW6010B	9/17/2008	5	1	5.0	32	mg/Kg	4596
Mercury	SW7471A	9/17/2008	0.1	1	0.10	ND	mg/Kg	4595
TPH (Diesel-SG)	SW8015B	9/17/2008	2	1	2.00	ND	mg/Kg	R17334
TPH (Motor Oil-SG)	SW8015B	9/17/2008	4	1	4.00	ND	mg/Kg	R17334
Surr: Pentacosane	SW8015B	9/17/2008	0	1	61.5-133	88.8	%REC	R17334

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Eric Lautenbach
Pacific Geotechnical Engineering

Date Received: 9/16/2008
Date Reported: 9/23/2008

Client Sample ID: Comp B-3(A-D)
Sample Location: Stevens Creek Levee
Sample Matrix: SOIL
Date/Time Sampled 9/16/2008

Lab Sample ID: 0809108-005
Date Prepared: 9/17/2008

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
4,4´-DDD	SW8081A	9/17/2008	2	1	2.00	ND	µg/Kg	R17337
4,4´-DDE	SW8081A	9/17/2008	2	1	2.00	ND	µg/Kg	R17337
4,4´-DDT	SW8081A	9/17/2008	2	1	2.00	ND	µg/Kg	R17337
Aldrin	SW8081A	9/17/2008	2	1	2.00	ND	µg/Kg	R17337
alpha-BHC	SW8081A	9/17/2008	2	1	2.00	ND	µg/Kg	R17337
alpha-Chlordane	SW8081A	9/17/2008	2	1	2.00	ND	µg/Kg	R17337
beta-BHC	SW8081A	9/17/2008	2	1	2.00	ND	µg/Kg	R17337
Chlordane	SW8081A	9/17/2008	20	1	20.0	ND	µg/Kg	R17337
delta-BHC	SW8081A	9/17/2008	2	1	2.00	ND	µg/Kg	R17337
Dieldrin	SW8081A	9/17/2008	2	1	2.00	ND	µg/Kg	R17337
Endosulfan I	SW8081A	9/17/2008	2	1	2.00	ND	µg/Kg	R17337
Endosulfan II	SW8081A	9/17/2008	2	1	2.00	ND	µg/Kg	R17337
Endosulfan sulfate	SW8081A	9/17/2008	2	1	2.00	ND	µg/Kg	R17337
Endrin	SW8081A	9/17/2008	2	1	2.00	ND	µg/Kg	R17337
Endrin aldehyde	SW8081A	9/17/2008	2	1	2.00	ND	µg/Kg	R17337
Endrin ketone	SW8081A	9/17/2008	2	1	2.00	ND	µg/Kg	R17337
gamma-BHC	SW8081A	9/17/2008	2	1	2.00	ND	µg/Kg	R17337
gamma-Chlordane	SW8081A	9/17/2008	2	1	2.00	ND	µg/Kg	R17337
Heptachlor	SW8081A	9/17/2008	2	1	2.00	ND	µg/Kg	R17337
Heptachlor epoxide	SW8081A	9/17/2008	2	1	2.00	ND	µg/Kg	R17337
Methoxychlor	SW8081A	9/17/2008	5	1	5.00	ND	µg/Kg	R17337
Toxaphene	SW8081A	9/17/2008	100	1	100	ND	µg/Kg	R17337
Surr: Decachlorobiphenyl	SW8081A	9/17/2008	0	1	54.6-127	94.1	%REC	R17337
Surr: Tetrachloro-m-xylene	SW8081A	9/17/2008	0	1	54-122	106	%REC	R17337
Benzene	SW8260B	9/17/2008	10	1	10	ND	µg/Kg	R17332
Ethylbenzene	SW8260B	9/17/2008	10	1	10	ND	µg/Kg	R17332
Methyl tert-butyl ether (MTBE)	SW8260B	9/17/2008	10	1	10	ND	µg/Kg	R17332
Toluene	SW8260B	9/17/2008	10	1	10	ND	µg/Kg	R17332
Xylenes, Total	SW8260B	9/17/2008	15	1	15	ND	µg/Kg	R17332
Surr: 4-Bromofluorobenzene	SW8260B	9/17/2008	0	1	55.8-141	112	%REC	R17332
Surr: Dibromofluoromethane	SW8260B	9/17/2008	0	1	59.8-148	119	%REC	R17332
Surr: Toluene-d8	SW8260B	9/17/2008	0	1	55.2-133	86.7	%REC	R17332
TPH (Gasoline)	SW8260B(TPH)	9/17/2008	100	1	100	ND	µg/Kg	G17332
Surr: 4-Bromofllurobenzene	SW8260B(TPH)	9/17/2008	0	1	56.9-133	66.0	%REC	G17332

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Definitions, legends and Notes

Note	Description
ug/kg	Microgram per kilogram (ppb, part per billion).
ug/L	Microgram per liter (ppb, part per billion).
mg/kg	Milligram per kilogram (ppm, part per million).
mg/L	Milligram per liter (ppm, part per million).
LCS/LCSD	Laboratory control sample/laboratory control sample duplicate.
MDL	Method detection limit.
MRL	Modified reporting limit. When sample is subject to dilution, reporting limit times dilution factor yields MRL.
MS/MSD	Matrix spike/matrix spike duplicate.
N/A	Not applicable.
ND	Not detected at or above detection limit.
NR	Not reported.
QC	Quality Control.
RL	Reporting limit.
% RPD	Percent relative difference.
a	pH was measured immediately upon the receipt of the sample, but it was still done outside the holding time.
sub	Analyzed by subcontracting laboratory, Lab Certificate #

Torrent Laboratory, Inc. **Date:** *23-Sep-08*

CLIENT: Pacific Geotechnical Engineering
Work Order: 0809108
Project: 2227E

ANALYTICAL QC SUMMARY REPORT

BatchID: 4595

Sample ID **MB-4595**	SampType: **MBLK**	TestCode: **HG_CTS**	Units: **mg/Kg**	Prep Date: **9/17/2008**	RunNo: **17340**
Client ID: **ZZZZZ**	Batch ID: **4595**	TestNo: **SW7471A**	**(SW7471APR**	Analysis Date: **9/17/2008**	SeqNo: **248416**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	ND	0.10									

Sample ID **LCS-4595**	SampType: **LCS**	TestCode: **HG_CTS**	Units: **mg/Kg**	Prep Date: **9/17/2008**	RunNo: **17340**
Client ID: **ZZZZZ**	Batch ID: **4595**	TestNo: **SW7471A**	**(SW7471APR**	Analysis Date: **9/17/2008**	SeqNo: **248414**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	1.306	0.10	1.25	0	104	80.5	133				

Sample ID **LCSD-4595**	SampType: **LCSD**	TestCode: **HG_CTS**	Units: **mg/Kg**	Prep Date: **9/17/2008**	RunNo: **17340**
Client ID: **ZZZZZ**	Batch ID: **4595**	TestNo: **SW7471A**	**(SW7471APR**	Analysis Date: **9/17/2008**	SeqNo: **248415**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	1.342	0.10	1.25	0	107	80.5	133	1.306	2.77	30	

Qualifiers: E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike Recovery outside accepted recovery limits

CLIENT: Pacific Geotechnical Engineering
Work Order: 0809108
Project: 2227E

ANALYTICAL QC SUMMARY REPORT

BatchID: 4596

Sample ID **MB-4596** SampType: **MBLK** TestCode: **6010B_S** Units: **mg/Kg** Prep Date: **9/17/2008** RunNo: **17350**
Client ID: **ZZZZZ** Batch ID: **4596** TestNo: **SW6010B** **(SW3050B)** Analysis Date: **9/17/2008** SeqNo: **248475**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	ND	5.0									
Arsenic	ND	1.7									
Barium	ND	5.0									
Beryllium	ND	2.0									
Cadmium	ND	1.0									
Chromium	ND	5.0									
Cobalt	ND	5.0									
Copper	ND	5.0									
Lead	ND	1.0									
Molybdenum	ND	5.0									
Nickel	ND	5.0									
Selenium	ND	5.0									
Silver	ND	1.0									
Thallium	ND	5.0									
Vanadium	ND	5.0									
Zinc	ND	5.0									

Sample ID **LCS-4596** SampType: **LCS** TestCode: **6010B_S** Units: **mg/Kg** Prep Date: **9/17/2008** RunNo: **17350**
Client ID: **ZZZZZ** Batch ID: **4596** TestNo: **SW6010B** **(SW3050B)** Analysis Date: **9/17/2008** SeqNo: **248473**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	46.50	5.0	50	0	93.0	30.7	130				
Arsenic	47.15	1.7	50	0	94.3	71	121				
Barium	49.40	5.0	50	0.25	98.3	70.2	130				
Beryllium	45.90	2.0	50	0	91.8	73.3	115				
Cadmium	47.50	1.0	50	0	95.0	68.7	110				
Chromium	49.15	5.0	50	0.1	98.1	76	116				
Cobalt	46.70	5.0	50	0	93.4	57.4	122				
Copper	49.80	5.0	50	0.1	99.4	74.8	119				
Lead	46.35	1.0	50	0.2	92.3	67.9	118				
Molybdenum	46.95	5.0	50	0	93.9	62.9	123				

Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike Recovery outside accepted recovery limits

CLIENT: Pacific Geotechnical Engineering
Work Order: 0809108
Project: 2227E

ANALYTICAL QC SUMMARY REPORT

BatchID: 4596

Sample ID **LCS-4596** SampType: **LCS** TestCode: **6010B_S** Units: **mg/Kg** Prep Date: **9/17/2008** RunNo: **17350**
Client ID: **ZZZZZ** Batch ID: **4596** TestNo: **SW6010B** **(SW3050B)** Analysis Date: **9/17/2008** SeqNo: **248473**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nickel	46.35	5.0	50	0	92.7	61.5	122				
Selenium	40.80	5.0	50	0	81.6	62	111				
Silver	47.25	1.0	50	0	94.5	81.1	109				
Thallium	44.75	5.0	50	0	89.5	39.2	125				
Vanadium	49.80	5.0	50	0	99.6	65.8	122				
Zinc	46.80	5.0	50	0	93.6	59.9	122				

Sample ID **LCSD-4596** SampType: **LCSD** TestCode: **6010B_S** Units: **mg/Kg** Prep Date: **9/17/2008** RunNo: **17350**
Client ID: **ZZZZZ** Batch ID: **4596** TestNo: **SW6010B** **(SW3050B)** Analysis Date: **9/17/2008** SeqNo: **248474**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	47.40	5.0	50	0	94.8	30.7	130	46.5	1.92	30	
Arsenic	47.75	1.7	50	0	95.5	71	121	47.15	1.26	30	
Barium	49.15	5.0	50	0.25	97.8	70.2	130	49.4	0.507	30	
Beryllium	49.40	2.0	50	0	98.8	73.3	115	45.9	7.35	30	
Cadmium	47.10	1.0	50	0	94.2	68.7	110	47.5	0.846	30	
Chromium	48.30	5.0	50	0.1	96.4	76	116	49.15	1.74	30	
Cobalt	47.05	5.0	50	0	94.1	57.4	122	46.7	0.747	30	
Copper	49.25	5.0	50	0.1	98.3	74.8	119	49.8	1.11	30	
Lead	46.75	1.0	50	0.2	93.1	67.9	118	46.35	0.859	30	
Molybdenum	47.20	5.0	50	0	94.4	62.9	123	46.95	0.531	30	
Nickel	46.90	5.0	50	0	93.8	61.5	122	46.35	1.18	30	
Selenium	42.50	5.0	50	0	85.0	62	111	40.8	4.08	30	
Silver	46.80	1.0	50	0	93.6	81.1	109	47.25	0.957	30	
Thallium	45.60	5.0	50	0	91.2	39.2	125	44.75	1.88	30	
Vanadium	49.40	5.0	50	0	98.8	65.8	122	49.8	0.806	30	
Zinc	46.40	5.0	50	0	92.8	59.9	122	46.8	0.858	30	

Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike Recovery outside accepted recovery limits

CLIENT: Pacific Geotechnical Engineering
Work Order: 0809108
Project: 2227E

ANALYTICAL QC SUMMARY REPORT

BatchID: 4612

Sample ID **MB-4612**	SampType: **MBLK**	TestCode: **6010B (STLC**	Units: **mg/L**		Prep Date: **9/22/2008**		RunNo: **17388**				
Client ID: **ZZZZZ**	Batch ID: **4612**	TestNo: **6010B (STLC**	**(SW3010A)**		Analysis Date: **9/22/2008**		SeqNo: **248966**				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium (STLC)	ND	0.100									

Sample ID **LCS-4612**	SampType: **LCS**	TestCode: **6010B (STLC**	Units: **mg/L**		Prep Date: **9/22/2008**		RunNo: **17388**				
Client ID: **ZZZZZ**	Batch ID: **4612**	TestNo: **6010B (STLC**	**(SW3010A)**		Analysis Date: **9/22/2008**		SeqNo: **248964**				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium (STLC)	8.160	0.100	10	0.01	81.5	75	125				

Sample ID **LCSD-4612**	SampType: **LCSD**	TestCode: **6010B (STLC**	Units: **mg/L**		Prep Date: **9/22/2008**		RunNo: **17388**				
Client ID: **ZZZZZ**	Batch ID: **4612**	TestNo: **6010B (STLC**	**(SW3010A)**		Analysis Date: **9/22/2008**		SeqNo: **248965**				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium (STLC)	8.640	0.100	10	0.01	86.3	75	125	8.16	5.71	30	

Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike Recovery outside accepted recovery limits

CLIENT: Pacific Geotechnical Engineering
Work Order: 0809108
Project: 2227E

ANALYTICAL QC SUMMARY REPORT

BatchID: G17332

Sample ID	**MB_G17332**	SampType:	**MBLK**	TestCode:	**TPH_GAS_S** Units: **µg/Kg**	Prep Date:	**9/16/2008**	RunNo:	**17332**
Client ID:	**ZZZZZ**	Batch ID:	**G17332**	TestNo:	**SW8260B(TP**	Analysis Date:	**9/16/2008**	SeqNo:	**248311**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH (Gasoline)	ND	100									
Surr: 4-Bromoflluorobenzene	34.00	0	50	0	68.0	56.9	133				

Sample ID	**LCS_G17332**	SampType:	**LCS**	TestCode:	**TPH_GAS_S** Units: **µg/Kg**	Prep Date:	**9/16/2008**	RunNo:	**17332**
Client ID:	**ZZZZZ**	Batch ID:	**G17332**	TestNo:	**SW8260B(TP**	Analysis Date:	**9/16/2008**	SeqNo:	**248312**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH (Gasoline)	841.0	100	1000	0	84.1	48.2	132				
Surr: 4-Bromoflluorobenzene	39.00	0	50	0	78.0	56.9	133				

Sample ID	**LCSD_G17332**	SampType:	**LCSD**	TestCode:	**TPH_GAS_S** Units: **µg/Kg**	Prep Date:	**9/17/2008**	RunNo:	**17332**
Client ID:	**ZZZZZ**	Batch ID:	**G17332**	TestNo:	**SW8260B(TP**	Analysis Date:	**9/17/2008**	SeqNo:	**248313**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH (Gasoline)	942.0	100	1000	0	94.2	48.2	132	841	11.3	30	
Surr: 4-Bromoflluorobenzene	39.00	0	50	0	78.0	56.9	133	0	0	0	

Qualifiers:	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike Recovery outside accepted recovery limits

CLIENT: Pacific Geotechnical Engineering
Work Order: 0809108
Project: 2227E

ANALYTICAL QC SUMMARY REPORT

BatchID: R17332

Sample ID **MB_R17332** SampType: **MBLK** TestCode: **8260B_S** Units: **µg/Kg** Prep Date: **9/16/2008** RunNo: **17332**
Client ID: **ZZZZZ** Batch ID: **R17332** TestNo: **SW8260B** Analysis Date: **9/16/2008** SeqNo: **248301**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	ND	10									
Ethylbenzene	ND	10									
Methyl tert-butyl ether (MTBE)	ND	10									
Toluene	ND	10									
Xylenes, Total	ND	15									
Surr: 4-Bromofluorobenzene	56.67	0	50	0	113	55.8	141				
Surr: Dibromofluoromethane	64.17	0	50	0	128	59.8	148				
Surr: Toluene-d8	43.07	0	50	0	86.1	55.2	133				

Sample ID **LCS_R17332** SampType: **LCS** TestCode: **8260B_S** Units: **µg/Kg** Prep Date: **9/16/2008** RunNo: **17332**
Client ID: **ZZZZZ** Batch ID: **R17332** TestNo: **SW8260B** Analysis Date: **9/16/2008** SeqNo: **248302**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	48.03	10	50	0	96.1	66.5	135				
Toluene	41.46	10	50	0	82.9	56.8	134				
Surr: 4-Bromofluorobenzene	57.81	0	50	0	116	55.8	141				
Surr: Dibromofluoromethane	65.75	0	50	0	132	59.8	148				
Surr: Toluene-d8	49.42	0	50	0	98.8	55.2	133				

Sample ID **LCSD_R17332** SampType: **LCSD** TestCode: **8260B_S** Units: **µg/Kg** Prep Date: **9/16/2008** RunNo: **17332**
Client ID: **ZZZZZ** Batch ID: **R17332** TestNo: **SW8260B** Analysis Date: **9/16/2008** SeqNo: **248303**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	49.61	10	50	0	99.2	66.5	135	48.03	3.24	30	
Toluene	40.82	10	50	0	81.6	56.8	134	41.46	1.56	30	
Surr: 4-Bromofluorobenzene	56.96	0	50	0	114	55.8	141	0	0	0	
Surr: Dibromofluoromethane	65.87	0	50	0	132	59.8	148	0	0	0	
Surr: Toluene-d8	50.93	0	50	0	102	55.2	133	0	0	0	

Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike Recovery outside accepted recovery limits

CLIENT: Pacific Geotechnical Engineering
Work Order: 0809108
Project: 2227E

ANALYTICAL QC SUMMARY REPORT

BatchID: R17334

Sample ID **SDSG080917A-MB** SampType: **MBLK** TestCode: **TPHDOSG_S** Units: **mg/Kg** Prep Date: **9/17/2008** RunNo: **17334**
Client ID: **ZZZZZ** Batch ID: **R17334** TestNo: **SW8015B** Analysis Date: **9/17/2008** SeqNo: **248337**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH (Diesel-SG)	ND	2.00									
TPH (Motor Oil-SG)	ND	4.00									
Surr: Pentacosane	3.223	0	3.3	0	97.7	61.5	133				

Sample ID **SDSG080917A-LCS** SampType: **LCS** TestCode: **TPHDOSG_S** Units: **mg/Kg** Prep Date: **9/17/2008** RunNo: **17334**
Client ID: **ZZZZZ** Batch ID: **R17334** TestNo: **SW8015B** Analysis Date: **9/17/2008** SeqNo: **248338**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH (Diesel-SG)	29.47	2.00	33.33	0	88.4	50.8	111				
Surr: Pentacosane	3.138	0	3.3	0	95.1	61.5	133				

Sample ID **SDSG080917A-LCS** SampType: **LCSD** TestCode: **TPHDOSG_S** Units: **mg/Kg** Prep Date: **9/17/2008** RunNo: **17334**
Client ID: **ZZZZZ** Batch ID: **R17334** TestNo: **SW8015B** Analysis Date: **9/17/2008** SeqNo: **248339**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH (Diesel-SG)	28.70	2.00	33.33	0	86.1	50.8	111	29.47	2.66	30	
Surr: Pentacosane	2.895	0	3.3	0	87.7	61.5	133	0	0	0	

Qualifiers:	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike Recovery outside accepted recovery limits

CLIENT: Pacific Geotechnical Engineering
Work Order: 0809108
Project: 2227E

ANALYTICAL QC SUMMARY REPORT

BatchID: **R17337**

Sample ID **SP080917A-MB** SampType: **MBLK** TestCode: **8081S** Units: **µg/Kg** Prep Date: **9/17/2008** RunNo: **17337**
Client ID: **ZZZZZ** Batch ID: **R17337** TestNo: **SW8081A** Analysis Date: **9/17/2008** SeqNo: **248382**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
4,4′-DDD	ND	2.00									
4,4′-DDE	ND	2.00									
4,4′-DDT	ND	2.00									
Aldrin	ND	2.00									
alpha-BHC	ND	2.00									
alpha-Chlordane	ND	2.00									
beta-BHC	ND	2.00									
Chlordane	ND	20.0									
delta-BHC	ND	2.00									
Dieldrin	ND	2.00									
Endosulfan I	ND	2.00									
Endosulfan II	ND	2.00									
Endosulfan sulfate	ND	2.00									
Endrin	ND	2.00									
Endrin aldehyde	ND	2.00									
Endrin ketone	ND	2.00									
gamma-BHC	ND	2.00									
gamma-Chlordane	ND	2.00									
Heptachlor	ND	2.00									
Heptachlor epoxide	ND	2.00									
Methoxychlor	ND	5.00									
Toxaphene	ND	100									
Surr: Decachlorobiphenyl	52.08	0	50	0	104	57	126				
Surr: Tetrachloro-m-xylene	50.42	0	50	0	101	55.7	122				

Sample ID **SP080917A-LCS** SampType: **LCS** TestCode: **8081S** Units: **µg/Kg** Prep Date: **9/17/2008** RunNo: **17337**
Client ID: **ZZZZZ** Batch ID: **R17337** TestNo: **SW8081A** Analysis Date: **9/17/2008** SeqNo: **248383**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
4,4′-DDD	20.69	2.00	20	0	103	39.6	130				
4,4′-DDE	20.52	2.00	20	0	103	45.3	130				

Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike Recovery outside accepted recovery limits

CLIENT: Pacific Geotechnical Engineering
Work Order: 0809108
Project: 2227E

ANALYTICAL QC SUMMARY REPORT

BatchID: R17337

Sample ID **SP080917A-LCS** SampType: **LCS** TestCode: **8081S** Units: **µg/Kg** Prep Date: **9/17/2008** RunNo: **17337**
Client ID: **ZZZZZ** Batch ID: **R17337** TestNo: **SW8081A** Analysis Date: **9/17/2008** SeqNo: **248383**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
4,4´-DDT	19.18	2.00	20	0	95.9	52.8	134				
Aldrin	20.18	2.00	20	0	101	53	123				
alpha-BHC	19.67	2.00	20	0	98.4	44.2	130				
alpha-Chlordane	21.01	2.00	20	0	105	42.4	133				
beta-BHC	20.56	2.00	20	0	103	44.2	127				
delta-BHC	19.64	2.00	20	0	98.2	67.6	117				
Dieldrin	20.28	2.00	20	0	101	44	130				
Endosulfan I	20.36	2.00	20	0	102	65.5	112				
Endosulfan II	19.72	2.00	20	0	98.6	56.9	117				
Endosulfan sulfate	20.10	2.00	20	0	101	62.1	122				
Endrin	20.77	2.00	20	0	104	44.1	121				
Endrin aldehyde	21.46	2.00	20	0	107	67.3	119				
Endrin ketone	19.20	2.00	20	0	96.0	53.9	120				
gamma-BHC	20.03	2.00	20	0	100	56.9	120				
gamma-Chlordane	20.96	2.00	20	0	105	68.7	112				
Heptachlor	20.90	2.00	20	0	105	63.6	117				
Heptachlor epoxide	21.13	2.00	20	0	106	54.6	137				
Methoxychlor	23.19	5.00	20	0	116	57	126				
Surr: Decachlorobiphenyl	68.17	0	70	0	97.4	57	126				
Surr: Tetrachloro-m-xylene	70.67	0	70	0	101	55.7	122				

Sample ID **SP080917A-LCSD** SampType: **LCSD** TestCode: **8081S** Units: **µg/Kg** Prep Date: **9/17/2008** RunNo: **17337**
Client ID: **ZZZZZ** Batch ID: **R17337** TestNo: **SW8081A** Analysis Date: **9/17/2008** SeqNo: **248384**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
4,4´-DDD	20.79	2.00	20	0	104	39.6	130	20.69	0.476	0	
4,4´-DDE	20.72	2.00	20	0	104	45.3	130	20.52	0.961	0	
4,4´-DDT	20.03	2.00	20	0	100	52.8	134	19.18	4.30	30	
Aldrin	20.42	2.00	20	0	102	53	123	20.18	1.18	30	
alpha-BHC	19.79	2.00	20	0	98.9	44.2	130	19.67	0.562	0	
alpha-Chlordane	21.33	2.00	20	0	107	42.4	133	21.01	1.50	0	

Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike Recovery outside accepted recovery limits

CLIENT: Pacific Geotechnical Engineering
Work Order: 0809108
Project: 2227E

ANALYTICAL QC SUMMARY REPORT

BatchID: **R17337**

Sample ID **SP080917A-LCSD** SampType: **LCSD** TestCode: **8081S** Units: **µg/Kg** Prep Date: **9/17/2008** RunNo: **17337**
Client ID: **ZZZZZ** Batch ID: **R17337** TestNo: **SW8081A** Analysis Date: **9/17/2008** SeqNo: **248384**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
beta-BHC	20.65	2.00	20	0	103	44.2	127	20.56	0.446	0	
delta-BHC	19.73	2.00	20	0	98.7	67.6	117	19.64	0.464	0	
Dieldrin	20.56	2.00	20	0	103	44	130	20.28	1.39	30	
Endosulfan I	20.33	2.00	20	0	102	65.5	112	20.36	0.160	0	
Endosulfan II	19.70	2.00	20	0	98.5	56.9	117	19.72	0.0971	0	
Endosulfan sulfate	20.28	2.00	20	0	101	62.1	122	20.1	0.870	0	
Endrin	21.11	2.00	20	0	106	44.1	121	20.77	1.64	30	
Endrin aldehyde	18.61	2.00	20	0	93.1	67.3	119	21.46	14.2	0	
Endrin ketone	19.90	2.00	20	0	99.5	53.9	120	19.2	3.57	0	
gamma-BHC	20.12	2.00	20	0	101	56.9	120	20.03	0.422	30	
gamma-Chlordane	21.18	2.00	20	0	106	68.7	112	20.96	1.05	0	
Heptachlor	21.42	2.00	20	0	107	63.6	117	20.9	2.42	30	
Heptachlor epoxide	21.06	2.00	20	0	105	54.6	137	21.13	0.324	0	
Methoxychlor	20.90	5.00	20	0	104	57	126	23.19	10.4	0	
Surr: Decachlorobiphenyl	69.67	0	70	0	99.5	57	126	0	0	0	
Surr: Tetrachloro-m-xylene	71.26	0	70	0	102	55.7	122	0	0	0	

Sample ID **0809108-005A MS** SampType: **MS** TestCode: **8081S** Units: **µg/Kg** Prep Date: **9/17/2008** RunNo: **17337**
Client ID: **Comp B-3(A-D)** Batch ID: **R17337** TestNo: **SW8081A** Analysis Date: **9/17/2008** SeqNo: **248404**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
4,4´-DDT	21.73	2.00	20	0	109	55.9	137				
Aldrin	20.89	2.00	20	0	104	45.7	123				
Dieldrin	21.40	2.00	20	0	107	52	130				
Endrin	22.61	2.00	20	0	113	51.6	136				
gamma-BHC	20.86	2.00	20	0	104	49.6	127				
Heptachlor	22.29	2.00	20	0	111	50.6	127				
Surr: Decachlorobiphenyl	67.85	0	70	0	96.9	45.5	130				
Surr: Tetrachloro-m-xylene	72.05	0	70	0	103	48.2	117				

Qualifiers:	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike Recovery outside accepted recovery limits

CLIENT: Pacific Geotechnical Engineering
Work Order: 0809108
Project: 2227E

ANALYTICAL QC SUMMARY REPORT

BatchID: R17337

Sample ID **0809108-005A MSD** SampType: **MSD** TestCode: **8081S** Units: **µg/Kg** Prep Date: **9/17/2008** RunNo: **17337**
Client ID: **Comp B-3(A-D)** Batch ID: **R17337** TestNo: **SW8081A** Analysis Date: **9/17/2008** SeqNo: **248405**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
4,4´-DDT	21.33	2.00	20	0	107	55.9	137	21.73	1.87	30	
Aldrin	20.79	2.00	20	0	104	45.7	123	20.89	0.489	30	
Dieldrin	21.15	2.00	20	0	106	52	130	21.4	1.17	30	
Endrin	21.80	2.00	20	0	109	51.6	136	22.61	3.65	30	
gamma-BHC	20.78	2.00	20	0	104	49.6	127	20.86	0.369	30	
Heptachlor	22.37	2.00	20	0	112	50.6	127	22.29	0.343	30	
Surr: Decachlorobiphenyl	67.92	0	70	0	97.0	45.5	130	0	0	0	
Surr: Tetrachloro-m-xylene	69.67	0	70	0	99.5	48.2	117	0	0	0	

Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike Recovery outside accepted recovery limits

Torrent Laboratory, Inc.

WORK ORDER Summary

17-Sep-08

Work Order 0809108

Client ID: PACIFIC GEOTECHNICAL ENG

Project: 2227E **QC Level:**

Comments: 2 day rush!! One 4pt composite. Report to Eric at elautenbach@earthlink.net

Sample ID	Client Sample ID	Collection Date	Date Received	Date Due	Matrix	Test Code	Hld	MS	SEL	Sub	Storage
0809108-001A	B-3A	9/16/2008 5:40:00 PM	9/16/2008		Soil		☐	☐	☐	☐	SR
0809108-002A	B-3B	9/16/2008 5:42:00 PM					☐	☐	☐	☐	SR
0809108-003A	B-3C	9/16/2008 5:44:00 PM					☐	☐	☐	☐	SR
0809108-004A	B-3D	9/16/2008 5:46:00 PM					☐	☐	☐	☐	SR
0809108-005A	Comp B-3(A-D)	9/16/2008		9/18/2008		3050B_S	☐	☐	☐	☐	SR
				9/18/2008		6010B_S	☐	☐	☑	☐	SR
				9/18/2008		7471_PREP	☐	☐	☐	☐	SR
				9/18/2008		8081S	☐	☐	☐	☐	SR
				9/18/2008		8260B_S_PETROLEUM	☐	☐	☑	☐	SR
				9/18/2008		HG_CTS	☐	☐	☐	☐	SR
				9/18/2008		TPH_GAS_S_GCMS	☐	☐	☐	☐	SR
				9/18/2008		TPHDOSG_S	☐	☐	☐	☐	SR

CHAIN-OF-CUSTODY

0809108

PACIFIC GEOTECHNICAL ENGINEERING ☒ 16055-D Caputo Drive, Morgan Hill, CA 95037 408.778.2818 phone 408.779.6879 fax

☐

PROJECT NAME: STEVENS CREEK LEVEE	PROJECT NUMBER: 2227E	TURNAROUND TIME (BUSINESS DAYS): ☐ 10 DAYS ☐ 5 DAYS ☐ 72 HOURS ☒ 48 HOURS ☐ 24 HOURS	TEMPERATURE ON RECEIPT C°
PROJECT CONTACT: BEESON LIANG		CHECK BOX IF EDF IS NOT NEEDED: ☒	
E-MAIL: BLIANG@PACIFIC-GEOTECHNICAL.COM		REQUESTED ANALYSES	
SAMPLER SIGNATURE: ELAUTENBACH@EARTHLINK.NET (cc results)			
SPECIAL INSTRUCTIONS OR NOTES: PLEASE COMPOSITE 4 → 1 AS SHOWN			

LAB USE ONLY	Field Sample Identification	SAMPLING		MATRIX	NO. OF CONT.	CAM 17 METALS	8081 PESTICIDES	TPHg, BTEX, MTBE	TPH DIESEL + OIL (W/SILICA CLEANUP)	FIELD NOTES: Container/Preservative or PID Readings or Laboratory Notes
		DATE	TIME							
001A	B-3A	9/16/08	5:40pm	SOIL	1	X	X	X	X	NEED RESULTS BY NOON THURSDAY 9/18/08
002A	B-3B	↓	5:42pm	SOIL	1	X	X	X	X	
003A	B-3C	↓	5:44pm	SOIL	1	X	X	X	X	
004A	B-3D	↓	5:46pm	SOIL	1	X	X	X	X	
005A	comp (B3A-D)									
										composite
										.431

RUSH
2 DAYS

Relinquished by: (Signature & Company) PGE 9-16-08 6:10PM	Received by: (Signature & Company) Falguni	Date: 9-16-08	Time: 6:10PM
Relinquished by: (Signature & Company) (ERIC LAUTENBACH)	Received by: (Signature & Company)	Date:	Time:
Relinquished by: (Signature & Company)	Received by: (Signature & Company)	Date:	Time: